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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

REARDEN LLC, REARDEN MOVA LLC,
California limited liability companies,

Plaintiffs,

v.

No. 3:17-cv-04006-JST

**FIRST AMENDED COMPLAINT
FOR COPYRIGHT, PATENT, AND
TRADEMARK INFRINGEMENT**

THE WALT DISNEY COMPANY, a Delaware
corporation, WALT DISNEY MOTION
PICTURES GROUP, INC., a California
corporation, BUENA VISTA HOME
ENTERTAINMENT, INC. a California
corporation, MARVEL STUDIOS, LLC, a
Delaware limited liability company,
MANDEVILLE FILMS, INC., a California
corporation,

DEMAND FOR JURY TRIAL

Defendants.

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1 Plaintiffs Rearden LLC and Rearden Mova LLC (collectively “Plaintiffs”), through their
 2 attorneys and for their claims against defendants The Walt Disney Company, Walt Disney Motion
 3 Pictures Group, Inc., Buena Vista Home Entertainment, Inc., Marvel Studios, LLC (collectively
 4 “Disney”), and Mandeville Films, Inc. (collectively “Defendants”), allege as follows.

5 I. INTRODUCTION

6 “There have been a lot of great CG [computer graphics] performances,
 7 but [the Beast] was a romantic hero, someone who was at the
 8 emotional center of the movie. I always said that we could get
 everything else in this movie right, but if we didn’t get a Beast that
 people believed in then [the movie] wouldn’t work.”¹

– Bill Condon, Director, *Beauty and the Beast*

9 1. Disney’s *Beauty and the Beast* opened on March 17, 2017 to an astonishing \$170
 10 million in North America and \$350 million globally, establishing numerous box-office records. It
 11 became the top film opening of all time for a PG-rated film, both domestically *and* internationally. It
 12 was the seventh largest opening for a film of any rating in North America. And it is now the highest
 13 grossing PG-rated film of all time, earning over \$500 million domestically and \$1.25 billion
 14 worldwide. *Beauty and the Beast* is the tenth highest grossing movie of any rating of all time.²

15 2. The film’s romantic hero, the Beast, was a CG (computer graphics) character played
 16 by actor Dan Stevens, with every human subtlety of his facial performance carried through to the
 17 animal-like CG face of the Beast by an innovative Oscar-winning visual effects (“VFX”) technology
 18 called Contour Reality Capture, but generally referred-to by defendants as “MOVA.” Stevens
 19 described how Contour was used:

20 The facial capture [for the Beast] was done separately using a
 21 technology called “MOVA.” So, every ten days, two weeks, I’d go into
 22 a booth and spray my face with UV paint and 27 little cameras would
 23 capture the facial expressions of all the scenes we had done on
 previous days...they would take that information and morph it onto the
 Beast, his face...

24 And co-star Emma Watson (Belle) lauded Contour, saying:

26 ¹ Truitt, Brian, “Watch the crazy way ‘Beauty and the Beast’ turned Dan Stevens into a monster”,
 27 USA Today, May 29, 2017. [https://www.usatoday.com/story/life/entertainthis/2017/05/29/exclusive-
 video-how-dan-stevens-was-transformed-in-beauty-and-the-beast/102281138/](https://www.usatoday.com/story/life/entertainthis/2017/05/29/exclusive-video-how-dan-stevens-was-transformed-in-beauty-and-the-beast/102281138/).

28 ² <http://www.boxofficemojo.com/movies/?id=beautyandthebeast2017.htm>.

1 I'm so pleased that we did it the way we did it because when you see
 2 Beast on screen there is something so human about him... [Contour]
 3 really captures the subtlety of Dan's facial expression and the
 performance that he gives...I don't think the world has seen anything
 like it before. I think it's really unique to our film.³

4 Director Bill Condon went further, expressly crediting the success of the CG Beast to the unique
 5 capabilities of Contour and attributing the film's success in its entirety to it:

6 "[The Beast] was at the emotional center of the movie, who was the
 7 romantic hero of the movie, who was going to be a CG character...and
 it was this new process [Contour] which—you know usually its dots
 8 like this [Condon points to his face] and then animators fill in the
 dots—but actually captured every pore of Dan [Stevens]'s skin and
 that's why so much of him, this great performance, comes through..."⁴

9 This view was affirmed by *Beauty and the Beast's* editor, Virginia Katz:

10 "...the main concern, for me and I think for all [working on the
 11 movie], was how that the Beast was going to be visualized. I mean, if
 the Beast didn't work, then the film wouldn't work."⁵

12 3. But in all of the film industry and media accolades about the record-breaking success
 13 of *Beauty and the Beast*, and the acclaimed cutting-edge digital Contour technology that made the
 14 film's success possible, nowhere is it mentioned that the patented and copyright-protected Contour
 15 technology was stolen from its inventor and developer, Rearden LLC, and its owner Rearden Mova
 16 LLC. Nowhere is it mentioned that although Disney had previously contracted with Rearden LLC
 17 and its controlled entities on *four previous major motion pictures* to use Contour, had entered
 18 negotiation on multiple occasions with the thieves for "licensing or acquiring" the "MOVA" Contour
 19 assets including "patents" and "software," and knew of a Rearden Demand Letter⁶ to one of the
 20 thieves warning that he was unlawfully in possession of Rearden's facial performance capture
 21 intellectual property (which it knew included "patents" and "software"), Disney nonetheless
 22

23 ³ Paris Press Conference, Feb 17, 2017.

24 https://www.youtube.com/watch?v=R9mKV_gklgw&feature=youtu.be&t=12m14s and
 25 <https://youtu.be/PDmNbXMTxd0?t=12m5s>.

26 ⁴ *Id.*

27 ⁵ Romanello, Linda, Post Magazine, March 1, 2017.

28 <http://www.postmagazine.com/Publications/Post-Magazine/2017/March-1-2017/Cover-Story-Disneys-i-Beauty-and-the-Beast-I.aspx>.

⁶ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt: 383, at 169.

1 contracted with the thieves to use the stolen Contour system. Nowhere is it mentioned that Disney
 2 received numerous Contour capture videos bearing Rearden’s copyright notice, but continued using
 3 the copyrighted Contour software and *removed* Rearden’s copyright notice when it used the capture
 4 videos in promotional materials. And, nowhere is it mentioned that *after* Rearden and Rearden
 5 Mova were in widely-reported litigation against the thieves over the Contour copyrighted software,
 6 patents and MOVA and CONTOUR trademarks, Disney secretly used Contour in *Beauty and the*
 7 *Beast* throughout the litigation, and then prior to the film’s release, flaunted its unauthorized use of
 8 Contour as a promotional vehicle for the film. Throughout this entire time, Disney never bothered to
 9 contact its longtime Contour service provider Rearden LLC to ask any questions or to verify
 10 Disney’s authorization to use the Contour program, system, methods, trade secrets, or trademarks
 11 that Disney knew Rearden owned.

12 4. And this was not the first time. Disney contracted with the same thieves previously
 13 (after receiving the Rearden Demand Letter) to use Contour in another film, *Guardians of the*
 14 *Galaxy*, which was also highly successful. Disney falsely designated the thieves as the owners of
 15 Rearden Mova’s Contour facial capture technologies, resulting in widespread industry confusion to
 16 the point where Disney’s unauthorized use of Contour in *Guardians of the Galaxy* was the *only*
 17 movie cited by the Academy of Motion Picture Arts and Sciences when awarding “MOVA Facial
 18 Performance Capture system”—confusing the name of the company (Rearden Mova) with the name
 19 of the technology (Contour)—a Sci-Tech Oscar:

20 “MOVA uses phosphorescent makeup applied with a sponge, strobing
 21 fluorescent lights, and an array of 32 cameras. Instead of capturing around
 22 a hundred points on the face [using conventional marker-based facial
 23 capture] MOVA creates an animated mesh with thousands of points. This
 24 offers digital recreations with all the subtle and dynamic motions
 25 performed by the actor. **You would have seen this most recently by Josh**
 26 **Brolin playing Thanos in the blockbuster *Guardians of the Galaxy*.**”⁷

27 ⁷ <https://youtu.be/F90iv9I-Sr4> and [http://oscar.go.com/news/oscar-news/150209-ampas-sci-tech-](http://oscar.go.com/news/oscar-news/150209-ampas-sci-tech-awards-2015-winners)
 28 [awards-2015-winners](http://oscar.go.com/news/oscar-news/150209-ampas-sci-tech-awards-2015-winners) (emphasis added).

1 And Disney contracted with the same thieves again to use the Contour technology for the same
2 Thanos character in a sequence in the closing credits of *Avengers: Age of Ultron* used by defendants
3 Disney MPG and Marvel to promote the next *Avengers* film.

4 5. Disney used the stolen Contour systems and methods, induced, caused, and materially
5 contributed to copying of the stolen Contour software, and caused confusion in its use of the MOVA
6 mark in at least *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, in
7 knowing or willfully blind violation of Rearden's intellectual property rights. This case seeks all just
8 and equitable copyright, patent, and trademark remedies on behalf of the authors, inventors, and
9 owners of the Contour program, systems and methods: plaintiffs Rearden and Rearden Mova.

10 II. THE PARTIES

11 6. Plaintiff Rearden LLC ("Rearden") is a California limited liability company having its
12 principal place of business at 355 Bryant Street, Suite 110, San Francisco, California 94107.

13 7. Plaintiff Rearden Mova LLC ("Rearden Mova") is a California limited liability
14 company having its principal place of business at 355 Bryant Street, Suite 110, San Francisco,
15 California 94107. Rearden Mova is wholly owned by Rearden.

16 8. Defendant The Walt Disney Company ("Disney Company") is a Delaware
17 corporation having its principal place of business at 500 S. Buena Vista Street, Burbank, California
18 91521.

19 9. Defendant Walt Disney Motion Pictures Group, Inc. ("Disney MPG") is a California
20 corporation having its principal place of business at 500 S. Buena Vista Street, Burbank, California
21 91521. Disney MPG is a wholly-owned subsidiary of defendant Disney Company.

22 10. Defendant Buena Vista Home Entertainment, Inc., d/b/a Walt Disney Studios
23 Home Entertainment ("Buena Vista"), is a California corporation having its principal place of
24 business at 500 S. Buena Vista Street, Burbank, California 91521. Buena Vista is a wholly-owned
25 subsidiary of defendant Disney Company.

IV. FACTUAL ALLEGATIONS

A. The Contour program, systems, and methods

17. The technology at the core of this case includes Contour Reality Capture (“Contour”) technology that was conceived, developed, and authored by plaintiff Rearden and is currently owned by plaintiff Rearden Mova.

18. Contour (<http://www.rearden.com/mova.html>) is one of many technologies incubated and offered by Rearden (www.rearden.com), a San Francisco Bay Area company founded in 1999 by Steve Perlman as an incubator for fundamental technology, creative works, and their interplay.

19. Contour is the fourth performance motion capture technology that Rearden has used in film and videogame production since its founding 19 years ago. Facial performance motion capture, as both a technology and a tool for motion picture and videogame production, falls squarely within the focus of Rearden’s business. Rearden practices all of its technologies and inventions, either directly or indirectly by spinning off Rearden entities to use its technologies and inventions. Despite holding a global portfolio of hundreds of its own patents, Rearden has never been in the business of licensing third parties to practice its technologies and inventions, and it has never licensed nor sought to license any of its technologies, inventions, patents, copyrights, or trademarks. Rearden’s intellectual property portfolio exists only to protect Rearden’s product and services offerings, and neither Rearden nor any of its controlled entities has ever previously sued any other person or entity for patent or copyright infringement.

20. Mr. Perlman previously worked as Principal Scientist at Apple where he developed, among many other technologies, the multimedia underpinnings of the color Macintosh as well as QuickTime. He left Apple for two startups that later went public, and designed and co-founded WebTV, which was later acquired by Microsoft. Microsoft named Perlman President of a new Silicon Valley division focused on television products, which ultimately developed Microsoft’s cable, satellite, IPTV and Xbox 360 systems. Perlman left Microsoft in 1999 and self-funded a technology incubator and visual effects production studio in San Francisco called Rearden, Inc. (now Rearden LLC). Rearden focused largely on developing fundamental media-related technologies

1 whose development times (e.g. 5 to 15 years) are beyond the horizon of venture capital and corporate
 2 research and development. Perlman has operated Rearden continuously through to this day. He is a
 3 prolific inventor. Perlman is a named inventor on over 500 patents worldwide, and among his many
 4 innovations are the following:

- 5 ▪ The underlying technology for QuickTime (the video streaming
 6 technology for iPhone, iPad, iPod and Mac and much of the
 7 multimedia technology for Apple);
- 8 ▪ The underlying technology for many of Microsoft’s video
 9 products;
- 10 ▪ OnLive cloud gaming technology;
- 11 ▪ Contour facial capture technology;
- 12 ▪ Artemis pCell wireless technology; and
- 13 ▪ A wide range of other technologies in other fields, including
 14 medical and national defense life-saving technologies, often in
 15 cooperation with the U.S. government and U.S. agencies,
 16 sometimes not publicly disclosed.

17 21. A major technology focus of Rearden from its 1999 founding to this day is
 18 “performance motion capture,” a production technology typically used to create a 3D animated
 19 character in a movie or a videogame that moves exactly like a human performer. In 2000, Rearden
 20 began offering motion capture services for movies and videogames (through wholly-owned
 21 subsidiaries Rearden Studios and then MOVA LLC) using existing commercial “marker-based”
 22 motion capture systems that could capture and track body (“skeletal”) motion, but there was no
 23 known technology at that time that could capture and track the subtleties of human facial motion in a
 24 realistic, life-like manner, despite an urgent need:

25 “The state of the art [before Contour] was ... marker-based motion
 26 capture...we looked at a number of other films at the time that were
 27 using facial marker tracking...as you can see, it gives you a pretty
 28 crappy performance... What we realized was that what we needed was
 the information that was going on between the markers. We needed the
 subtleties of the skin. We needed to see skin moving over muscle
 moving over bone. We needed creases and dimples and wrinkles...”⁸

⁸ Ulbrich, Ed (former Digital Domain CEO), “How Benjamin Button Got His Face” TED Talk, Feb 2009. https://www.ted.com/talks/ed_ulbrich_shows_how_benjamin_button_got_his_face.

1 Rearden set out to invent and perfect a photorealistic facial motion capture and tracking system.

2 22. Over the next five years, Rearden's technical team—including brilliant, talented, and
3 highly creative engineers, programmers, and visual effects artists—tried dozens of different
4 approaches to solve the problem. Years of experimenting, testing, trials, failures, sweat of the brow,
5 expenditure of millions of dollars, and finally stunning breakthroughs, ultimately led to the
6 conception and perfection of a solution to the long-felt need—a technology that precisely captures
7 and tracks the 3D shape and motion of a human face to sub-millimeter precision, producing
8 photorealistic results. Rearden branded the technology Contour Reality Capture, and offered it to the
9 videogame and motion picture industries. The solution was comprised of a complex apparatus and
10 methods for capturing facial performances, and wholly original software that operated the apparatus
11 and subsequently processed the performance captures into works that could be used by effects
12 studios to animate CG characters. This innovative technology was recognized in the motion picture
13 industry as revolutionary:

14 “Contour’s promise is enormous,” [Director David] Fincher said, “The
15 notion that the human face in all its subtleties could be mapped in real
16 time and such density of surface information opens up so many
possibilities for both two- and three-dimensional image makers and
story-tellers.”

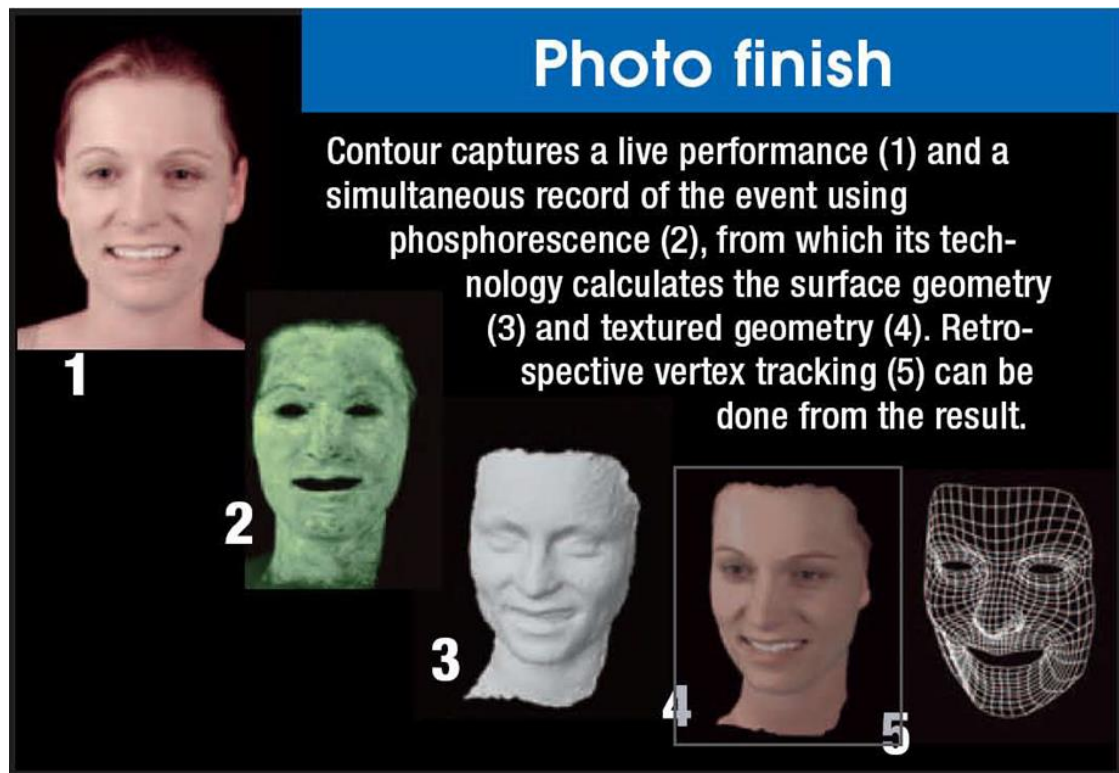
17 “I live in this environment, and I see stuff every day, so I get a little
18 jaded,” said [then Digital Domain Senior VP and Executive Producer
19 Ed] Ulbrich... “Other developments have been gradual, more
20 evolutionary than revolutionary. Contour separates the performance
from the photography. It’s a substantial turning point in the business,
and I think it will change how picture are made.”⁹

21 23. Contour’s technical breakthrough was introduced at the Special Interest Group on
22 Computer Graphics and Interactive Techniques (“SIGGRAPH”) Conference on July 31, 2006 to
23 wide acclaim, including photographs of Contour’s systems and methods on the front page of the *New*
24
25
26

27 ⁹ Marlowe, Chris, “Contour mapping intricate detail: Mova revolutionizing motion-capture
28 process with new system,” *The Hollywood Reporter*, July 31, 2006,
<http://www.rearden.com/press/2006/Contour-HollywoodReporter-060731-2.pdf>.

1 *York Times*¹⁰, page B1 of the *Wall Street Journal*¹¹, and *The Hollywood Reporter*, among other
 2 publications. Mr. Perlman was invited to present MOVA Contour technologies and their practical
 3 applications in movie production to the Directors Guild of America¹². And he was invited on many
 4 occasions to give public presentations on MOVA Contour and the development process that led to its
 5 invention, for example in a speech at Columbia University¹³.

6 24. The following photograph¹⁴ from an article in *The Hollywood Reporter* on the day
 7 Contour was unveiled—July 31, 2006—was directed to movie and videogame industry professionals
 8 and illustrates several Contour program output works, which are described in further detail later in
 9 subsequent allegations:



10 Markoff, John, “Camera System Creates Sophisticated 3-D Effects”, New York Times, July
 31, 2006. <https://nyti.ms/2uAfwGF>.

11 Wingfield, Nick, “Digital Replicas May Change Face of Films”, July 31, 2006.
<http://on.wsj.com/2teIRbO>.

12 ““Facial Performance Capture for Photoreal Digital Characters’ Presented by Steve Perlman,
 Founder & President, Mova”, Digital Day 2007: The Future of the Future, Directors Guild of
 America, July 28, 2007. http://ishindler.com/articles/DGA_Digital_Day_flyer07.pdf.

13 <https://youtu.be/1QxrQnJCXKo>.

14 Marlowe, *op. cit.*

25. Also on July 31, 2006, the following photographs appeared in a *New York Times* article directed to a general readership audience, which illustrate an application of the phosphor-based makeup used in Contour facial motion capture methods:



Actors must cover themselves with makeup containing phosphorescent powder for Contour, a system that can create 3-D effects. Austin Hice

and three Contour program output works (this photograph appeared on the front page):¹⁵

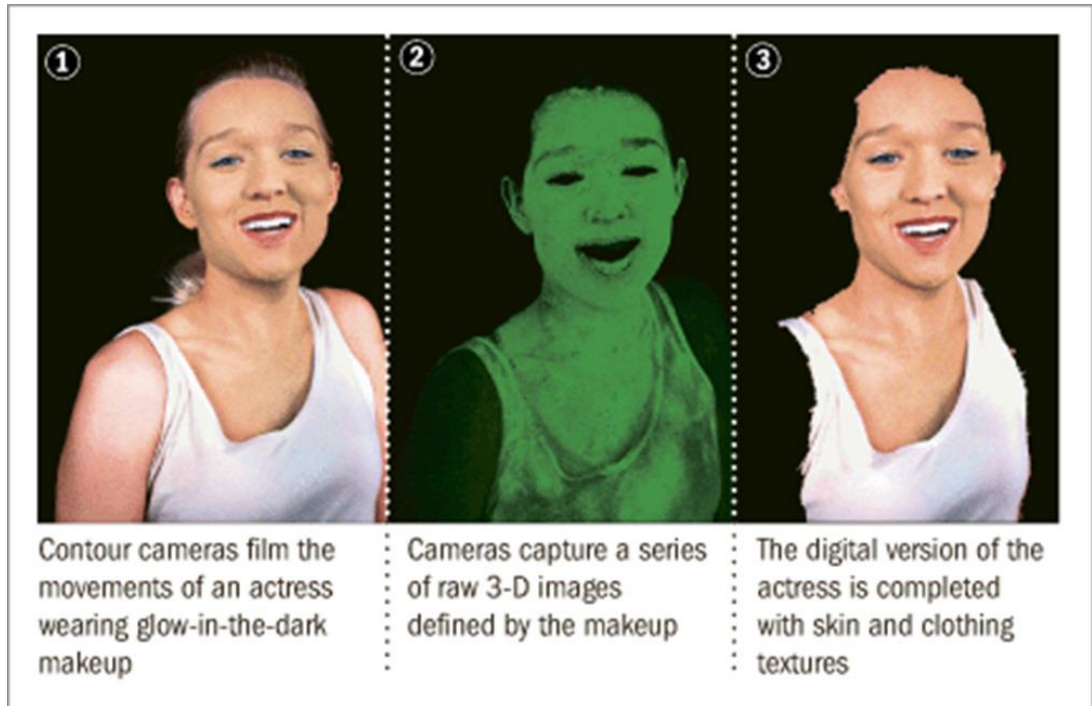


An actress goes from live performance, left, to phosphorescence, to a Contour-generated image, right. Mova.com

26. Also on July 31, 2006, the following photograph appeared in a *Wall Street Journal* article directed to a general readership audience, which illustrates the same three Contour program

¹⁵ Markoff, *op. cit.*

output works with “non-technical reader” annotations for each image (the web version of the article included a video that showed the three output works in motion):¹⁶



27. In one embodiment, Contour uses an array of cameras whose shutters are synchronized to strobing white lights and ultraviolet lights in conjunction with phosphor-based makeup applied to the performer in random patterns, with the entire system controlled by highly-advanced, original, and proprietary Contour program that operates the Contour system in real time to capture an actor’s performance frame-by-frame, and then processes the capture into original Contour program output works based on the captures.

28. The Contour system is controlled, and the captured camera images are processed, by several computers running the Contour program. Part of the program operates prior to a facial performance capture session to prepare and calibrate the Contour system. Part operates in real-time during a live facial performance capture. And part operates after the facial capture to process the captures into works that can be used to animate CG characters. The Contour program produces


¹⁶ Wingfield, *op. cit.*

several types of output works, some of which are used by the Contour program itself for further processing, and some are used for animating a CG face in a movie or videogame.

29. One embodiment of the operation of the Contour program, system, and methods is described in the following page from a Contour brochure below, distributed at computer graphics and entertainment industry conferences:


HOW IT WORKS

PREPARATION




Preparation is completed in under an hour. The actor's skin is sponged with an FDA-approved phosphorescent makeup, either alone or mixed with skin-tone base color. Cloth can also be treated with a phosphorescent dye.

LIGHTS




The Contour capture system is portable, and can be set up on any light-sealed stage. The stage is then lit with custom Kino Flo fluorescent fixtures. Because the lights are flashed on and off at 90 to 120 frames per second (i.e. beyond human perception), the stage appears steadily lit to the eye.

CAMERAS




Two sets of cameras are placed around the stage area:
Color cameras capture normally-lit surfaces only when the lights are on. This provides the reference video used for previews.
Geometry cameras capture phosphorescent patterns (embedded in the makeup or cloth dye) only when the lights are off.


ACTION




Live Performance: Contour enables true "digital directing." Subjects are able to move freely within the capture volume. Color cameras capture normally-lit surfaces, providing reference video from three or more cameras.



Capture Process: Our cameras capture every surface detail where phosphorescent makeup is applied. It's like having millions of invisible markers. Wrinkles, dimples, lips, nostrils—every subtle detail is captured in motion.



Captured Surface: The recorded phosphorescent patterns are then correlated to produce a high-resolution surface geometry—100,000+ polygons per scene.



Tracked Surface: Contour tracks your optimal number of surface points from frame to frame and shot to shot. Tracked points are specified by the client after the capture session and placed wherever required. Tracked points can be added, moved and retracked, utilizing the same capture data.

For more information, or to contact us, visit www.mova.com. The MOVA studio is located in San Francisco, CA.

Copyright MOVA® LLC 2006–2008. MOVA is a registered trademark and Contour is a trademark of MOVA LLC. Patents Pending.

1 30. **Preparation:** Phosphor-based makeup (various types of phosphor are supported) is
2 applied in a random pattern on the performer's face, neck, etc.—whatever body surfaces are intended
3 to be captured—typically using an airbrush, sponge or cotton swab.

4 31. **Lights:** The performer sits or stands in the arc-shaped Contour apparatus in a light-
5 sealed stage. One part of the Contour program causes white lights and ultraviolet lights to be flashed
6 so rapidly that the flashing is beyond human perception and it appears to the performer and observers
7 that the white and ultraviolet lights are on steadily.

8 32. **Cameras:** One part of the Contour program causes the shutters on two pluralities of
9 cameras, distributed around the apparatus, to open and close synchronously with the flashing of the
10 lights such that:

- 11 (a) a first plurality of cameras open their shutters when the white lights are on,
12 illuminating the natural skin color of the performer; and
13 (b) a second plurality of cameras open their shutters when the white lights are off
14 and the phosphor-based makeup is emitting random patterns of light.

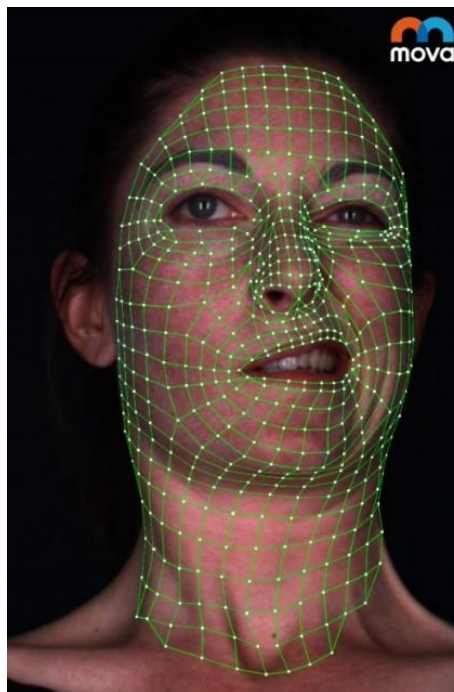
15 33. **Action:** The performer provides her or his facial performance while one part of the
16 Contour program causes the output of each of the plurality of cameras to be recorded onto storage
17 devices. The output works of the two pluralities of cameras are illustrated in each half of the face in
18 the “Capture Process” section of the brochure reproduced above.

- 19 (a) the output of the first plurality of cameras is called the “**Skin Texture**” and it
20 looks like normal skin and facial features of the performer from multiple
21 angles, largely without visible makeup, and
22 (b) the output of the second plurality of cameras is called the “**Makeup Pattern**”
23 and it looks like a random pattern of green or blue largely without showing the
24 skin or other facial features (e.g. eyes or mouth) of the performer.

25 34. Part of the Contour program processes the Makeup Pattern output work to create a
26 high-resolution 3D surface that moves in the shape of the skin of the performer with sub-millimeter
27

1 precision. This output work is called the “**Captured Surface**” and, rendered on a display, it looks
2 like a 3D bust of the performer’s skin in motion. A still frame of a Captured Surface work is shown
3 in the “Captured Surface” section of the brochure reproduced above.

4 35. The same part of the Contour program processes the Makeup Pattern output work to
5 create a high-resolution 3D mesh that tracks points on the skin of the performer in 3D as the skin
6 moves from frame-to-frame. This output work is called the “**Tracking Mesh**” and, rendered on a
7 display, it looks like a 3D mesh that exactly follows the movement, stretching and wrinkling, etc., of
8 the skin as the performer moves her or his face. A still frame of a Tracking Mesh work is shown in
9 the “Tracked Surface” section of the brochure reproduced above. The Tracking Mesh work tracks the
10 subtleties of the performer’s facial motion with sub-millimeter precision. For example, if the
11 performer’s expression causes the cheeks to bulge out from a smile, the points on the 3D mesh
12 tracking the cheek will bulge out in exactly the same 3D shape. If the forehead furrows into wrinkles,
13 then the points on the 3D mesh tracking the forehead will furrow into wrinkles in exactly the same
14 3D shape. The Tracking Mesh work can be configured to be at any resolution, whether thousands or
15 even millions of points, depending on the level of tracking detail required by the project. An example
16 of a Tracking Mesh work tracking skin deformation from an extreme expression is shown here:

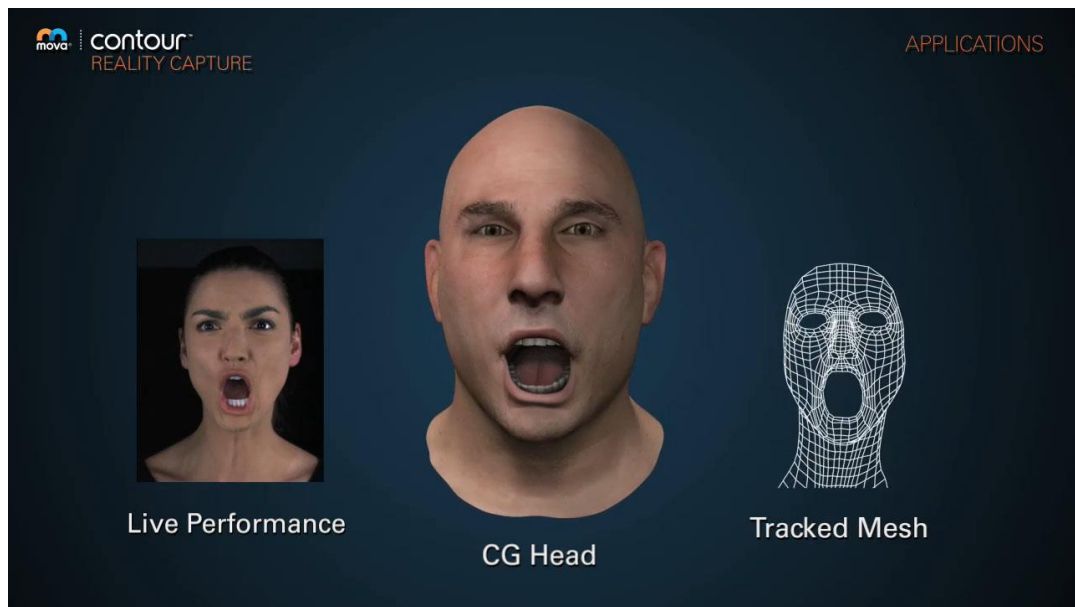


36. The Contour program's output works specified above can be used for many different applications. Often they are used for "retargeting" the performer's face onto another 3D model of a face, either a real face (e.g. when Rupert Grint (Ron Weasley) transforms into the face of Daniel Radcliffe (Harry Potter) in *Harry Potter and the Deathly Hallows, Part I*), or a fictional face (e.g. Mark Ruffalo's face transforms into the Hulk's face in *The Avengers*, Brad Pitt's 44-year-old face retargeted to an 87 year-old version of his face in *The Curious Case of Benjamin Button*), or Jeff Bridge's face retargeted in *TRON: Legacy* (2010) to his 28 year-younger face as it appeared in *TRON* (1982).

37. When the retargeting is from a first performer's real face to the real face of a second performer, then each performer's face is captured by the Contour system, with output works created by the Contour program for each performer. The Captured Surface, Tracking Mesh, Makeup Pattern, and Skin Texture output works can be used in the construction of a 3D model of the face of the second performer, and then the Tracking Mesh work of the first performer is used to animate the 3D model of the second performer's face. The result is a 3D model of the face of the second performer that is animated by the motion of the first performer's face. For example, the photograph below shows a man (the "second performer") captured by the Contour program, system, and methods. The 3D model of a CG head (center) was generated from the Contour program output works, including the Makeup Pattern (left) and Tracking Mesh (right) works:



38. The photograph below shows the performance of the woman (the “first performer”) in the brochure reproduced above (showing her Skin Texture (left) and Tracking Mesh (right) Contour output) works retargeted to the man’s CG head in the above photo by retargeting the points on her Tracking Mesh work to the 3D model of the man’s CG head. As you can see in her Live Performance (showing the Skin Texture output work, below left), her facial expression causes the man’s CG head to track her facial expression. Contour’s Tracking Mesh work is so precise that a high degree of realism is maintained, even though the man’s CG face and head have a very different shape and size than hers, and he is male and she is female. In fact, Contour output works capture the woman’s performance with such fidelity that observers of the animation have commented that despite the fact that the man’s CG face clearly has a male *shape*, the *motion* appears to be that of a female face. The video of this and other Contour examples is available on Rearden’s home page (www.rearden.com, click on the MOVA logo and click on the video), or directly (www.rearden.com/mova.php or <https://vimeo.com/86130623>):



39. A similar retargeting process can be performed with a fictional head. For example, the two photographs below are of a performer whose face was captured in the Contour system showing the Skin Texture output work on the left and how she appeared to the naked eye (or a conventional camera), showing the Makeup Pattern work combined with the Skin Texture work on the right:



40. The photograph below shows several views of a CG model of the head of a videogame character that was created by an artist:



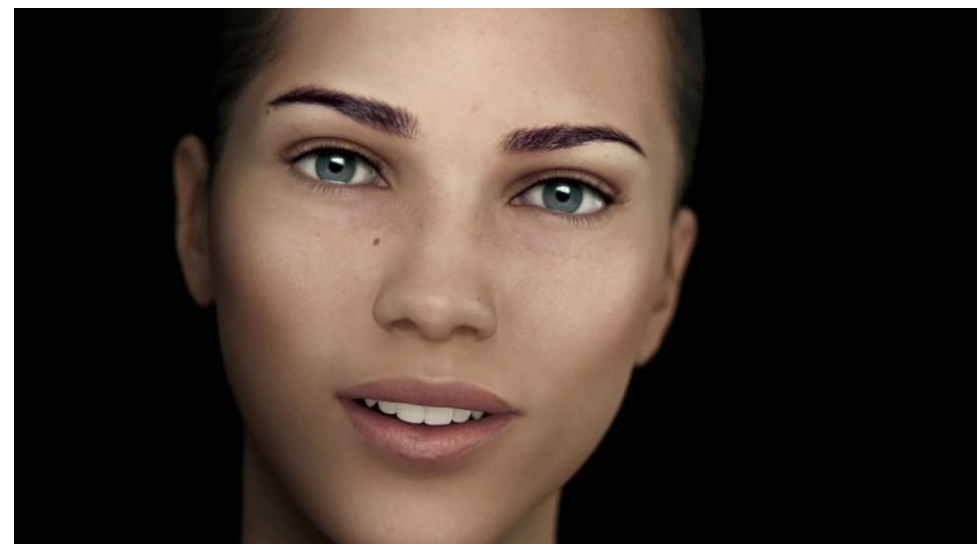
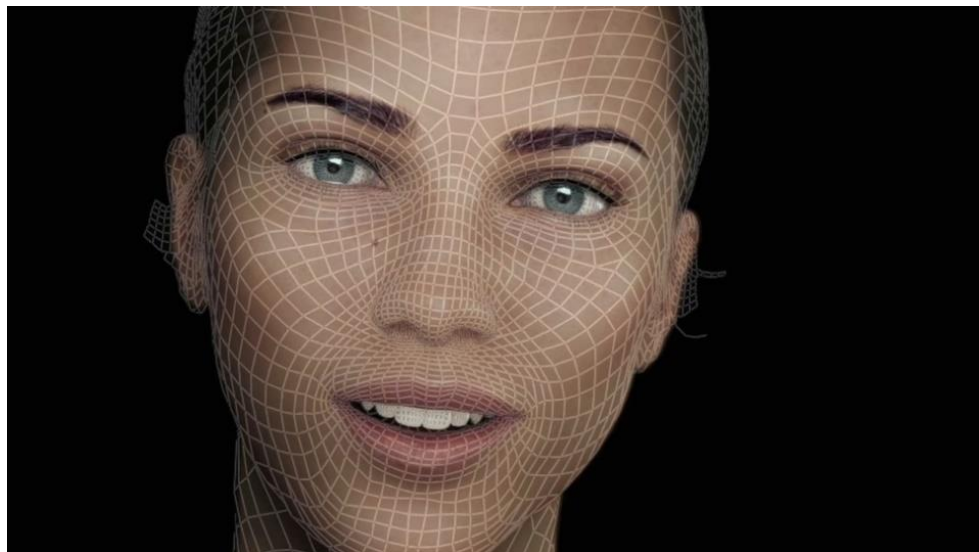
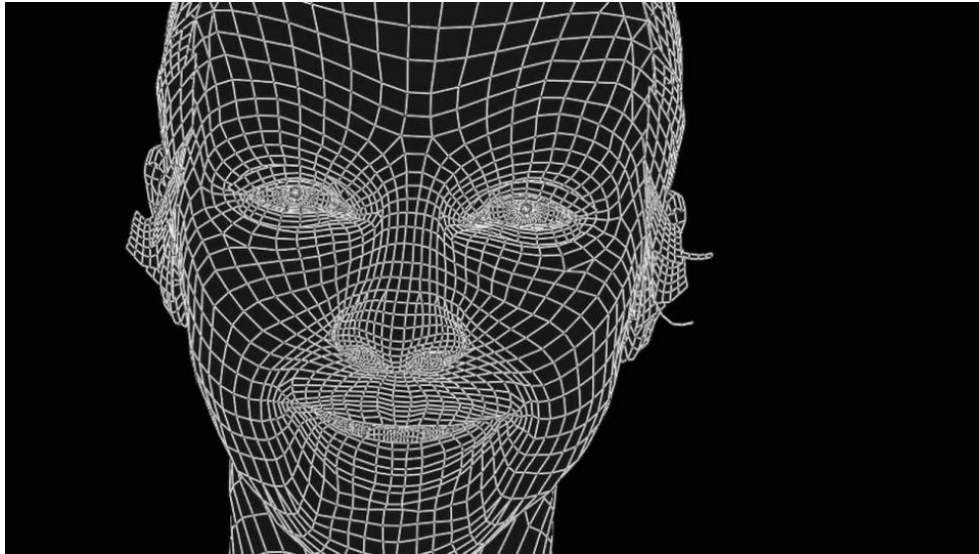
Although the head looks almost photoreal (it was only a test, not a polished CG model) when it is in a neutral pose and immobile, if the face were animated—whether through hand-drawn animation or prior art motion capture techniques—any photorealism would be lost because the human eye and brain are precisely attuned to notice any unnatural imperfection in facial motion. But, by using the Contour system and methods and the Contour program, every subtle motion of the human face is captured with sub-millimeter precision, producing output works that retain that precision and can be retargeted to any fictional CG head, bringing it to life.

41. The photographs below show the above videogame character's head in two expressions retargeted from the Tracking Mesh work generated by the Contour program from the

1 Contour facial capture of the above actress. Although the photorealism of the motion cannot be seen
2 in static photographs, the motion is realistic and life-like, despite the fact that the performer's face is
3 a very different shape than that of the CG head. Even in a static image, however, one can see how the
4 expressionless CG model tracked the good-natured expression of the actress:



42. A 3D "wireframe" (a mesh of 3D points) of the retargeted CG character's head is
shown below, separately and overlaid upon the rendered image, and then the final rendered image:



43. In summary, the Contour program transforms the facial performance of a live performer, capturing the most subtle of facial motions with sub-millimeter precision to animate with realism the life-like motion of faces of CG characters that appear in a finished movie, videogame, or other production. The process begins by airbrushing or otherwise applying a random pattern of phosphor-based makeup on a performer, having the performer sit or stand in the arc-shaped Contour apparatus surrounded by an array of white lights and ultraviolet lights and two pluralities of cameras, with the lights flashed rapidly and synchronized with the camera shutters as Skin Texture and Makeup Pattern works are created by the Contour program. The Contour program then processes the Makeup Pattern work to create thousands or even millions of points in 3D as the performer's face moves, producing precise Captured Surface and Tracking Mesh works. Thus, the Contour program produces output works that include the following:

- **Skin Texture**, showing the normal skin and facial features of the performer from multiple angles, largely without visible makeup, in color
- **Makeup Pattern**, showing the random pattern of makeup on the performer from multiple angles, largely without visible skin or facial features, in grayscale
- **Captured Surface**, a high-resolution moving 3D surface in the shape of the performer's skin as the performer's face moves
- **Tracking Mesh**, a high-resolution 3D mesh that exactly tracks the movement, stretching, wrinkling, etc. as the performer moves their face.

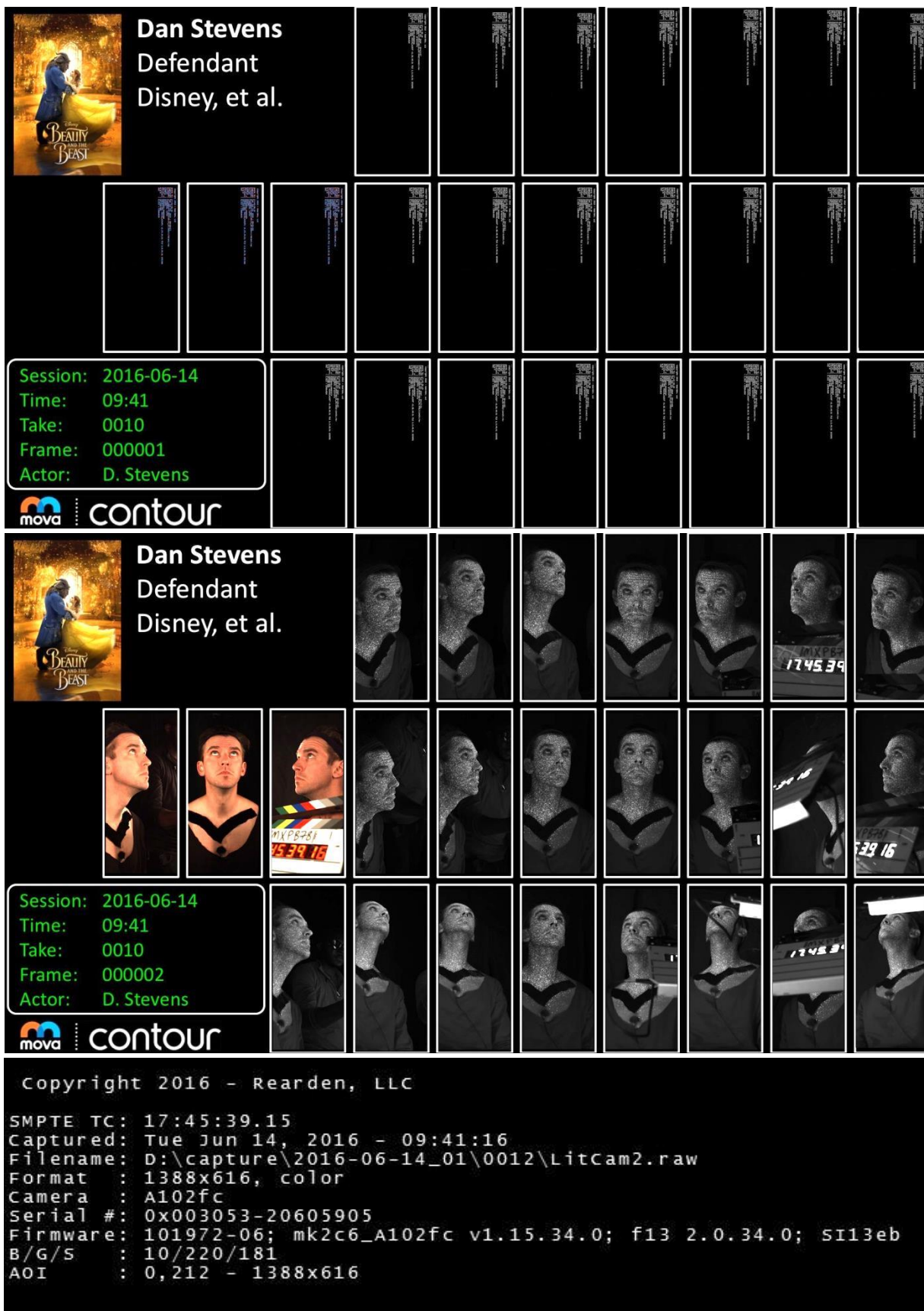
The Tracking Mesh work can then be retargeted to a CG face, animating it with photorealistic and natural motion, thereby precisely preserving every subtlety of human expression by the performer in the final movie, videogame, or other production.

44. The Contour program includes a security mechanism that automatically affixes notice of Rearden's Contour program copyright to Skin Texture and Makeup Pattern output works, an example of which is shown in the three images below from a *Beauty and the Beast* Contour capture of performer Dan Stevens. The first and second groups of images below show the first and second frames, respectively, of the 3 color Skin Texture and 22 grayscale Makeup Pattern works. The first

1 frame contains the copyright notice, year, date, and time of the capture and technical Contour capture
2 information; the second frame (and all subsequent frames) shows the performer's frame-by-frame
3 capture by the Contour program from the angle of each camera in the Contour apparatus. The third
4 image below is an enlargement of the first frame of one Skin Texture output work, showing the
5 copyright notice which reads, "Copyright 2016 - Rearden LLC", and also includes the date and time
6 of the Contour capture session: "Tue, Jun 14, 2016 - 09:41:16". The date and time stamping notifies
7 any Contour program end-user that the copyright of the Contour program is controlled by Rearden
8 LLC as of the date and time of the Contour capture. Since the end-user would not have access to the
9 copyright notices embedded into the Contour program's source code, the current-year copyright
10 notice serves as *express notification that Rearden LLC is asserting its copyright in the Contour*
11 *program*. This copyright protection feature affixed copyright notice on every Contour program Skin
12 Texture and Makeup Pattern work from the date of the Contour program theft in early 2013 until this
13 Court's Preliminary Injunction Order¹⁷ went into effect on June 17, 2016, finally halting use of the
14 stolen Contour program. The below Contour capture was time-stamped on June 14, 2016, evidencing
15 that the stolen Contour program was still in use by Disney MPG three days before the Injunction
16 Order in *Shenzhenshi, et al. v. Rearden, et al.*. From its theft in 2013 through the June 17, 2016
17 Injunction Order, many thousands of Contour program works were created for Disney movies using
18 the stolen Contour program, each affixed with "Copyright [current date] - Rearden LLC" and the
19 date and time of the capture.

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¹⁷ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt. 188



45. Within days after the Contour program, system and methods were unveiled at SIGGRAPH in 2006, tests and production began on one of the first movies utilizing Contour, *The Curious Case of Benjamin Button*. The movie was released in 2008. The photorealistic reverse-aging of Brad Pitt's face from an 87-year-old man backwards to his then-age of 44, and then further backwards to a younger age, was widely lauded as a visual effects ("VFX") milestone, the first ever photorealistic CG face, winning an Academy Award for Best Visual Effects for the team at the VFX production company, Digital Domain, which had hired Rearden to operate the Contour system to capture Brad Pitt's face and generate Contour program output works for the film.

46. In a widely-viewed TED (Technology, Entertainment, Design) Talk entitled, "How Benjamin Button Got His Face," Ed Ulbrich, then Digital Domain's Senior VP and Executive Producer (subsequently the CEO of successor Digital Domain 3.0, Inc.), confirmed that *The Curious Case of Benjamin Button* would have been "impossible" to make but for the Contour system and methods and the unprecedented facial capture precision and subtlety of the Contour program's output works. Ulbrich stated in the talk:

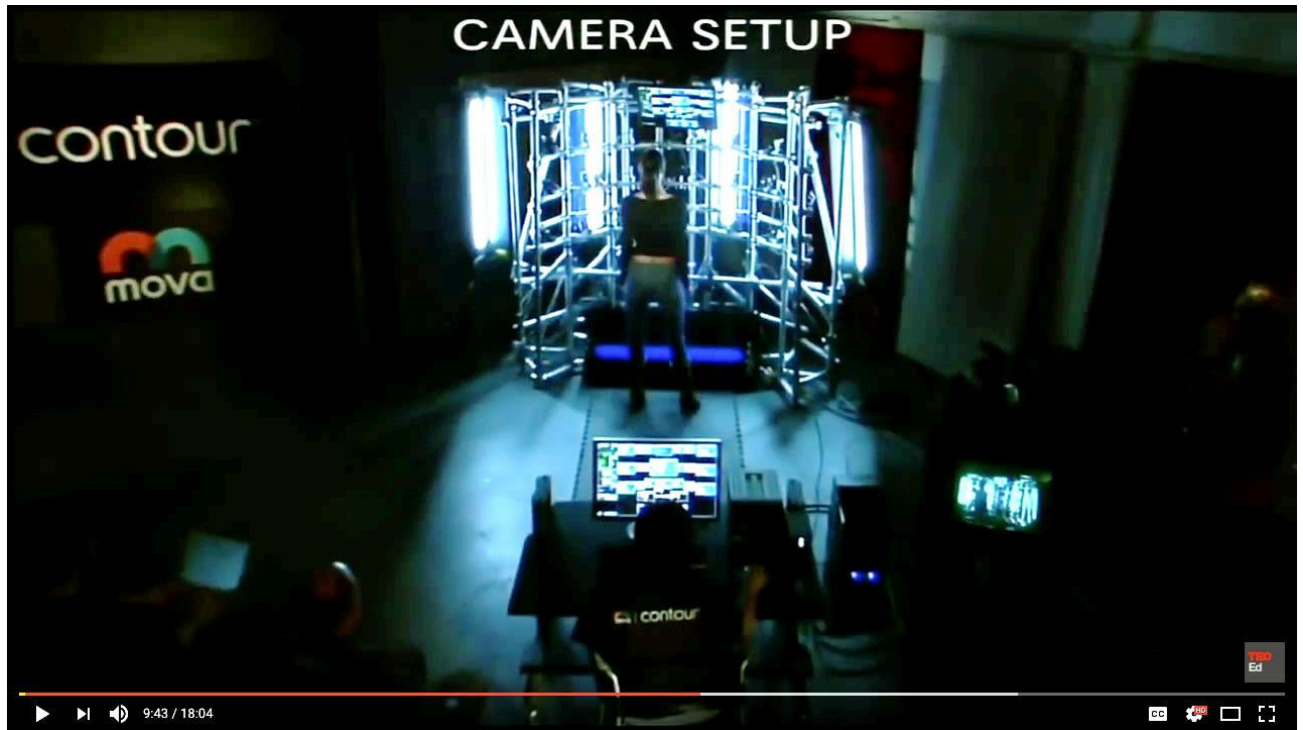
"We first got involved in *The [Curious Case of Benjamin Button]* project in the early 90s.... We took a lot of meetings and we seriously considered it. But at the time, we had to throw in the towel. **It was deemed impossible. It was beyond the technology of the day to depict a man aging backward...** The project came back to us a decade later.... **we came across a remarkable technology called Contour...** creating a surface capture as opposed to a marker capture... **This was when we had our 'Aha!'** **This was the breakthrough...** we could put Brad [Pitt] in this [Contour] device, and use this Contour process, and we could stipple on this phosphorescent makeup and put him under the black lights, and we could, in fact, scan him in real time... effectively, we ended up with a [Contour program output file] 3D database of everything Brad Pitt's face is capable of doing... we could transpose the [Contour program output file] data of Brad at [then-aged] 44 onto [a 3D model of] Brad at 87. So now, we had a 3D database of everything Brad Pitt's face can do at age 87, in his 70s and in his 60s."¹⁸

47. In the TED Talk, Ulbrich showed details of the Contour system and methods, Contour program output works, and how the CG face of Benjamin Button in the final movie was derived from

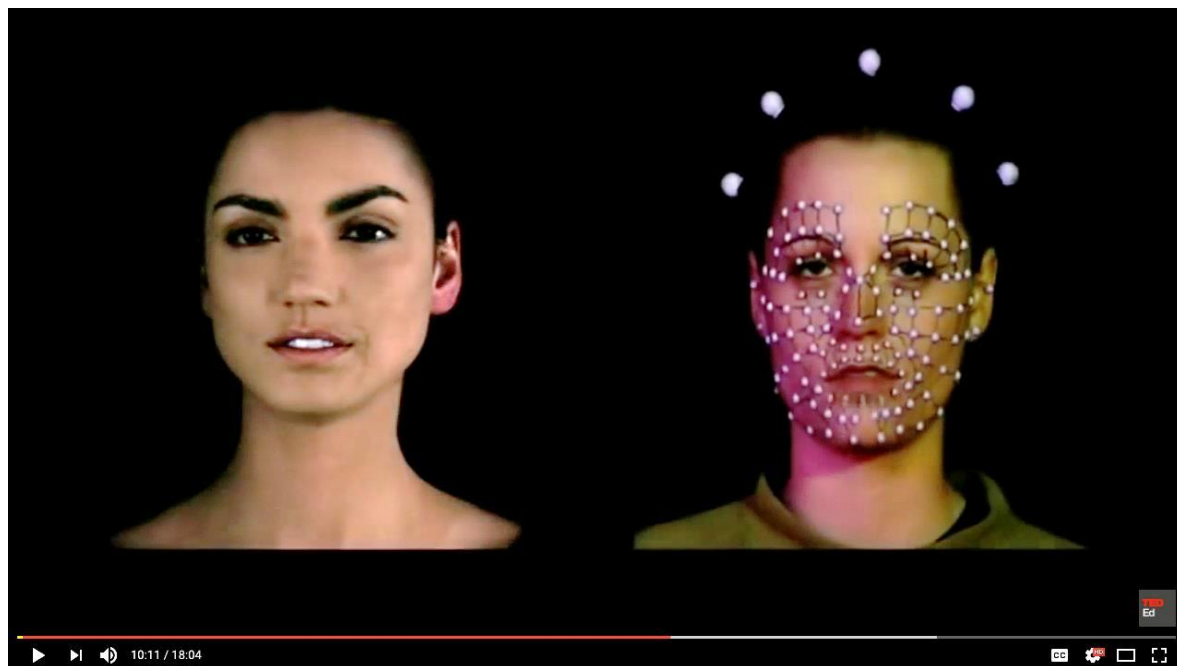
¹⁸ Ulbrich, *op. cit.* (emphasis added).

the Contour program output works. The following paragraphs describe still frames from the TED talk (labeled by “Minutes:Seconds” from the start of the video).

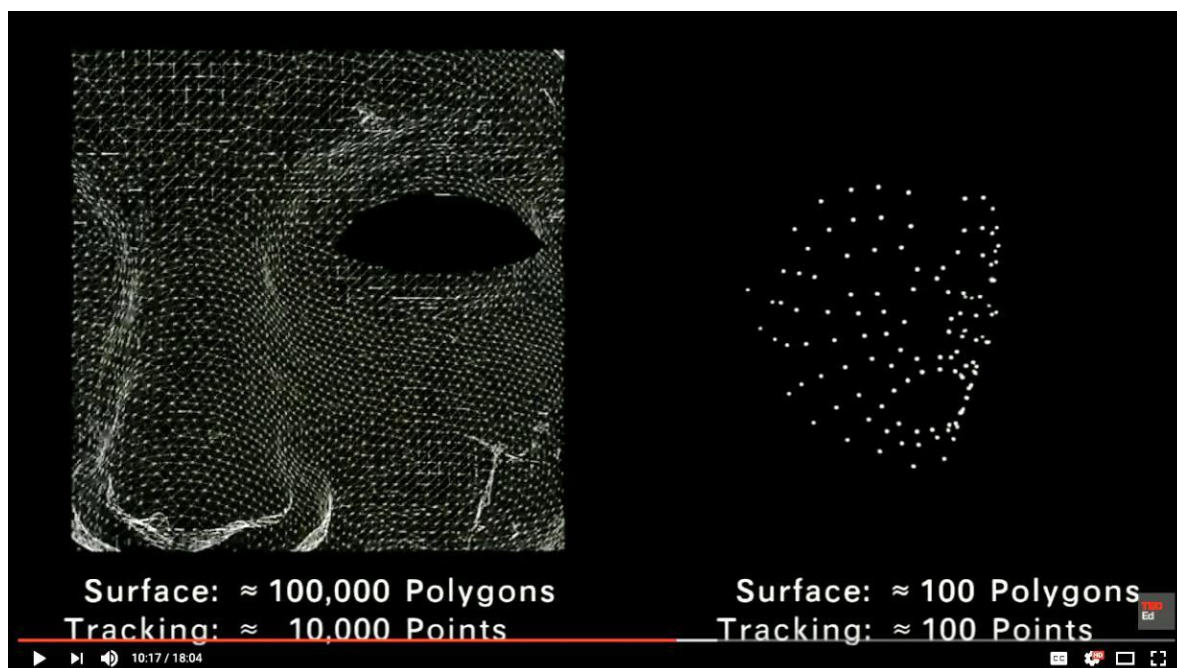
48. **9:43:** The branded Contour apparatus, a semicircle of two pluralities of cameras with synchronized white and ultraviolet lights surrounding a performer, with Rearden’s Mova LLC staff operating the Contour system:



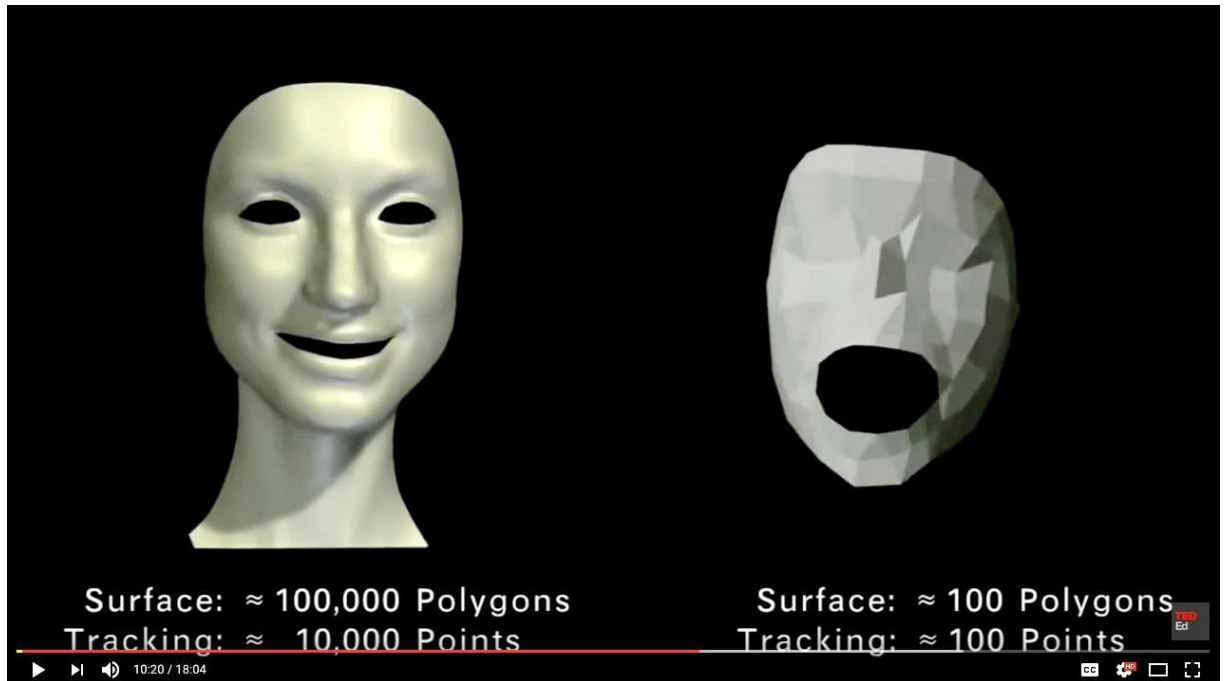
49. **10:11:** On the left, Contour program **Skin Texture** output work, showing the performer’s natural skin color and facial features. On the right, a performer with conventional motion capture markers on her face:



50. **10:17:** On the left, Contour program **Tracking Mesh** output work, showing hundreds of thousands of points in 3D, the Tracking Mesh work's resolution is so high that the points can only be seen by zooming in. In contrast, conventional marker-based resolution is shown on the right:



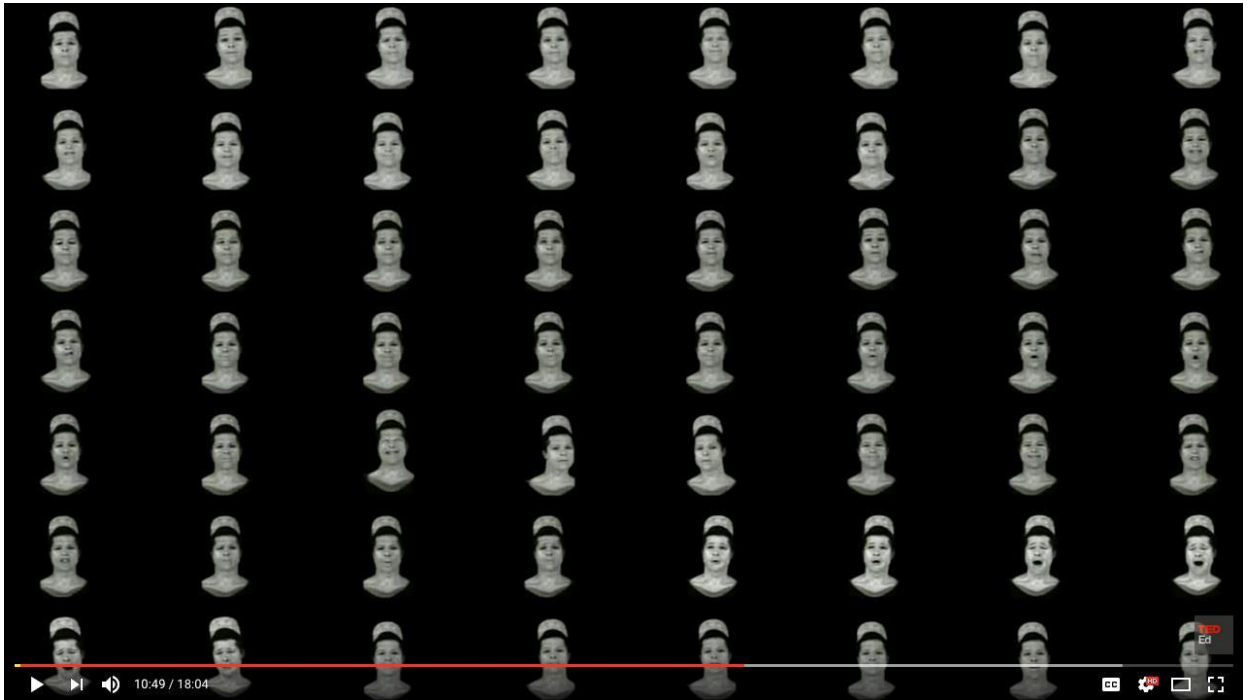
51. **10:20:** On the left the Contour program **Captured Surface** work, showing high-resolution surface geometry. In contrast, marker-based facial capture surface geometry on the right:



52. **10:39:** Contour program **Makeup Pattern** work, showing random patterns from glowing phosphor-based makeup. Each of the four Contour facial captures of Mr. Pitt was a separate motion facial performance used for a different facial expression of Benjamin Button. The Contour program created high-resolution **Captured Surface** and **Tracking Mesh** works from each of these:



53. **10:49:** Contour program **Makeup Pattern** works, showing how many Contour output works were used. Each of the Contour facial captures was a separate motion facial performance of Mr. Pitt used for a different facial expression of Benjamin Button. The Contour program created high-resolution **Captured Surface** and **Tracking Mesh** output works from each of these, creating a database of Capture Surface and Tracking Mesh output works:

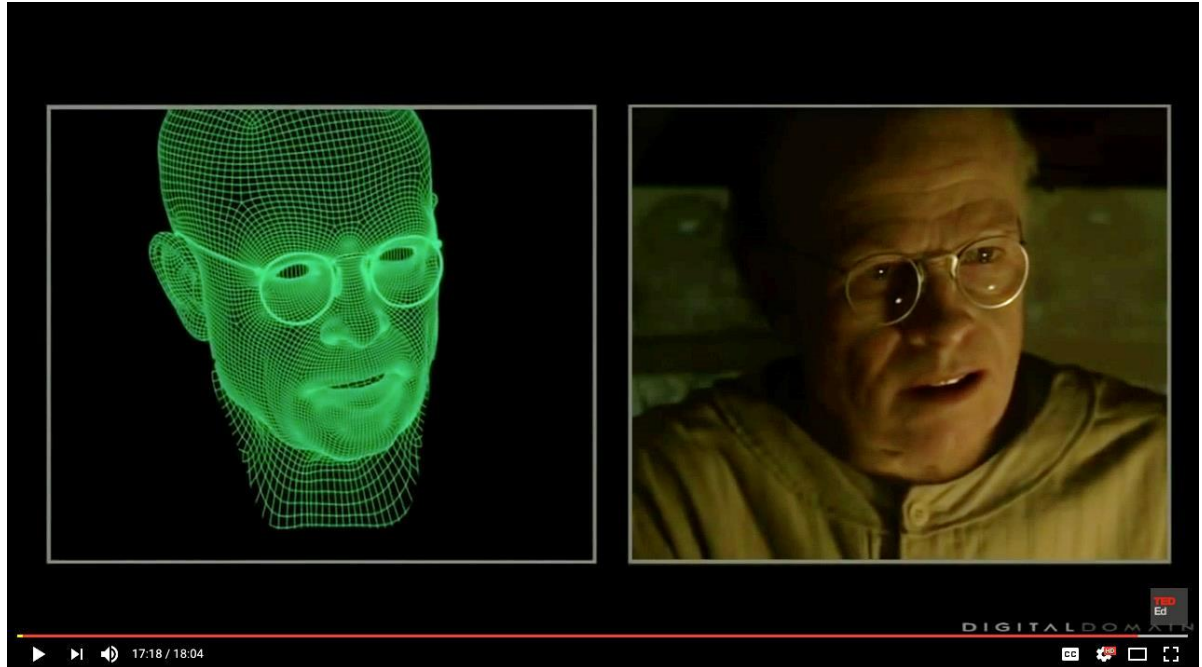


54. **12:33:** Contour program **Makeup Pattern** work (left), **Captured Surface** work (middle), retargeted **Captured Surface** and **Tracking Mesh** works to a fictional aged head (right), are shown below. The 3D points of the Contour **Tracking Mesh** work of Mr. Pitt's actual face were retargeted to corresponding points on the 3D fictional "maquette" (i.e. hand-made 3D bust) of Mr. Pitt at age 87. As a simple example, the point on the right corner of Mr. Pitt's actual mouth could correspond to the point on the right corner of the 3D maquette's mouth. As Mr. Pitt's smile widens during the Contour capture session, moving the tracked point on the corner of his mouth outward, the retargeted point on the 3D maquette's mouth would move proportionately outward causing the 87-year-old smile to widen. As described by Mr. Ulbrich: "[Left:] This is Brad doing one of the [character expression] poses. [Middle:] And here's the resulting [**Captured Surface** work] data that comes from that, the model that comes from that. [Right:] Retargeting is the process of transposing

that [**Captured Surface and Tracking Mesh work**] data onto another model. And because the life cast, or the bust—the maquette—of Benjamin was made from Brad, we could transpose the [**Captured Surface and Tracking Mesh work**] data of Brad at 44 [years] onto Brad at 87[years]. Effectively, we ended up with a [**Captured Surface and Tracking Mesh work**] 3D database of everything Brad Pitt’s face is capable of doing...we could transpose the [**Captured Surface and Tracking Mesh work**] data of Brad at [then-aged] 44 onto [a 3D maquette of] Brad at 87. So now, we had a 3D database of everything Brad Pitt’s face can do at age 87, in his 70s and in his 60s”:



55. **17:18:** On the left is 87-year-old fictional head maquette **Tracking Mesh work** retargeted from a Contour program **Tracking Mesh work**, with a pair of glasses added in as a prop. The final CG face is shown on the right after various steps such as texturing and lighting that is applied to the maquette. The resulting CG face is integrated into the live-action footage of the final scene:

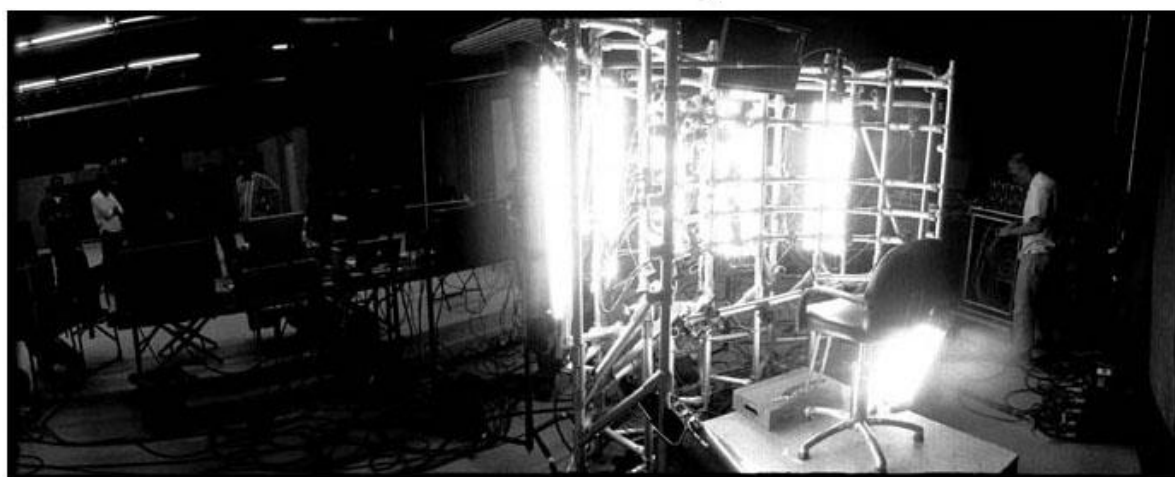


56. The photorealistic reverse-aging derived from the Contour system, methods and output works received wide acclaim when *The Curious Case of Benjamin Button* was released in December of 2008. But even before the movie's release, word of the unprecedented CG face realism achieved by the Contour system was spreading through the VFX industry. In July of 2008, defendant Disney hired Mova LLC for another reverse-aging movie, *TRON: Legacy*, the sequel to Disney's *TRON* released in 1982. Contour was used in a similar manner as in *Benjamin Button* to reverse-age the face of Jeff Bridges, the star of *TRON* and *TRON: Legacy*, to look as he did in 1982. Mr. Bridges published his experience of using Contour through wide-angle black-and-white photography and hand-written notations, below:¹⁹

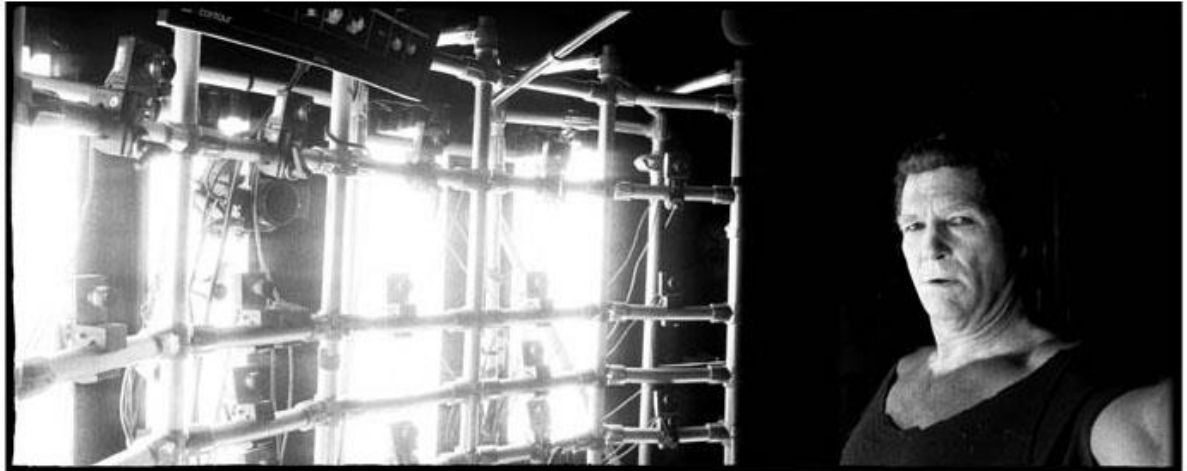
¹⁹ http://www.jeffbridges.com/tron_book/tron_book_08.html.



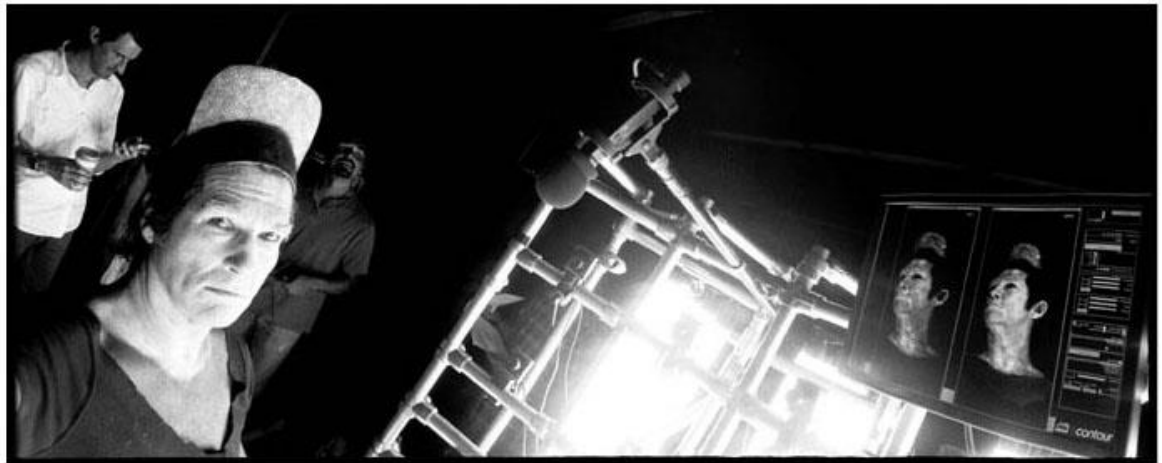
and Ready



to be digitized



Mova Technology came up with this rig



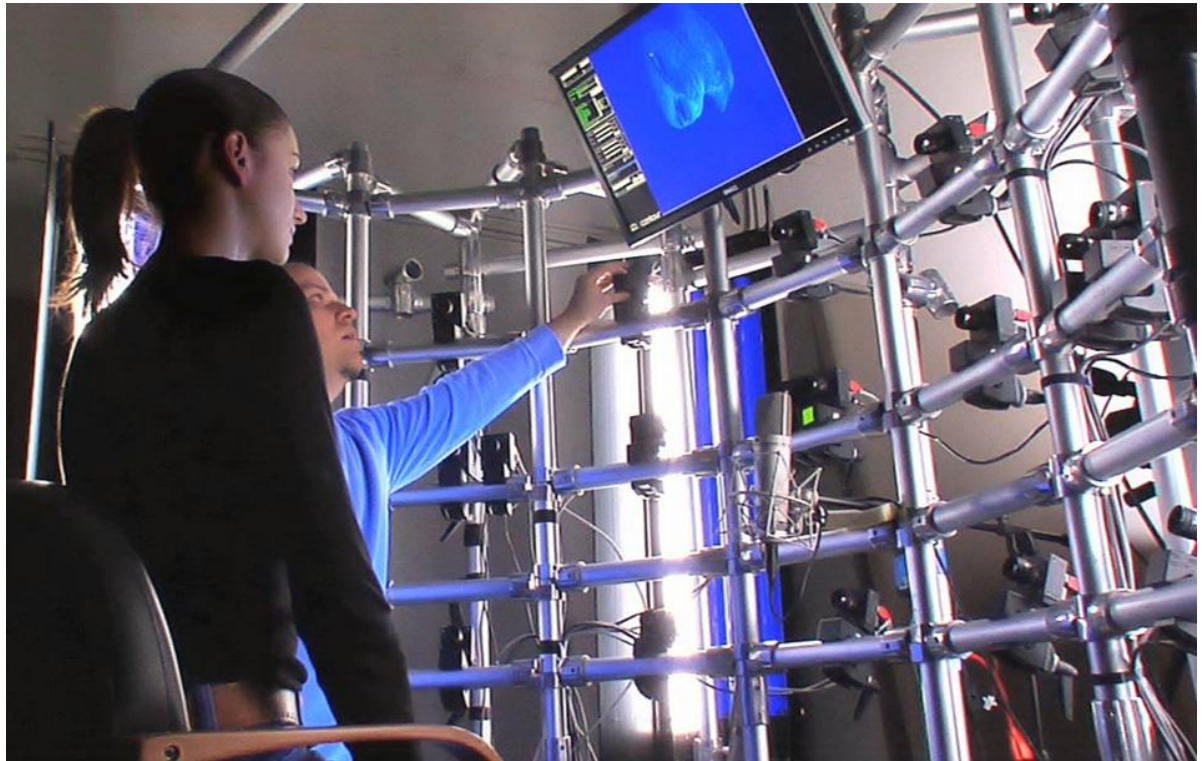
that captures every expression you can think of.

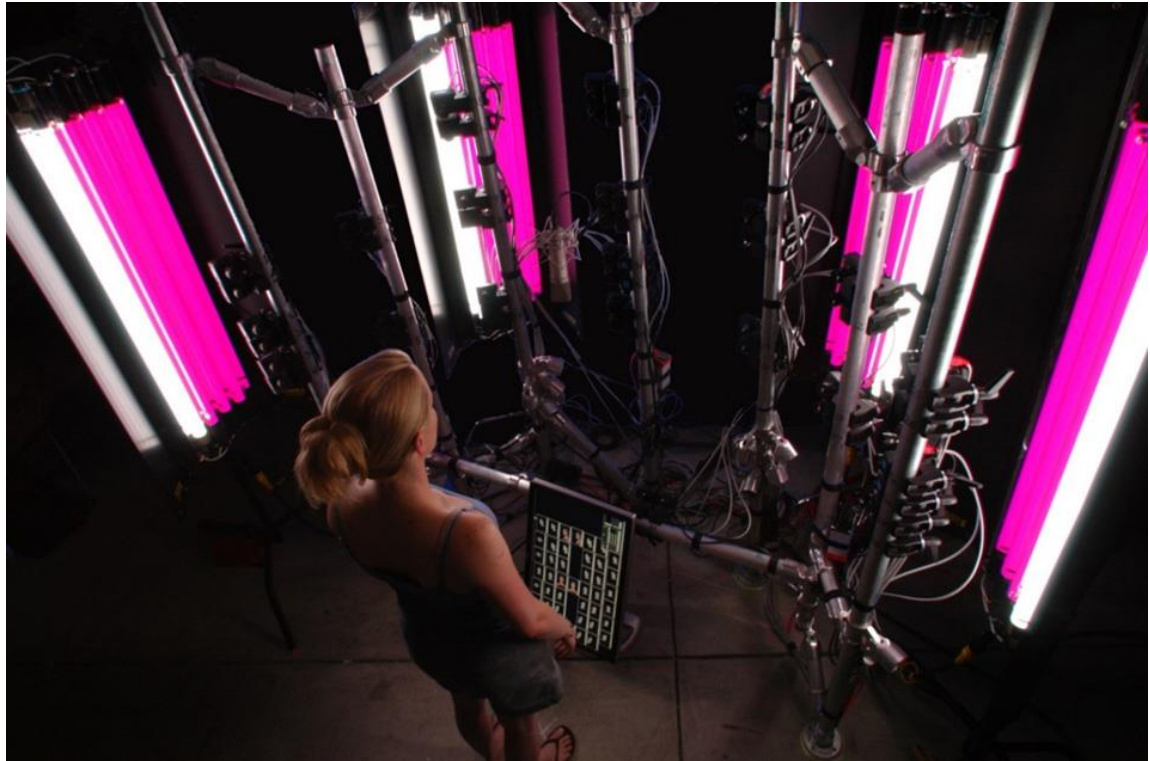


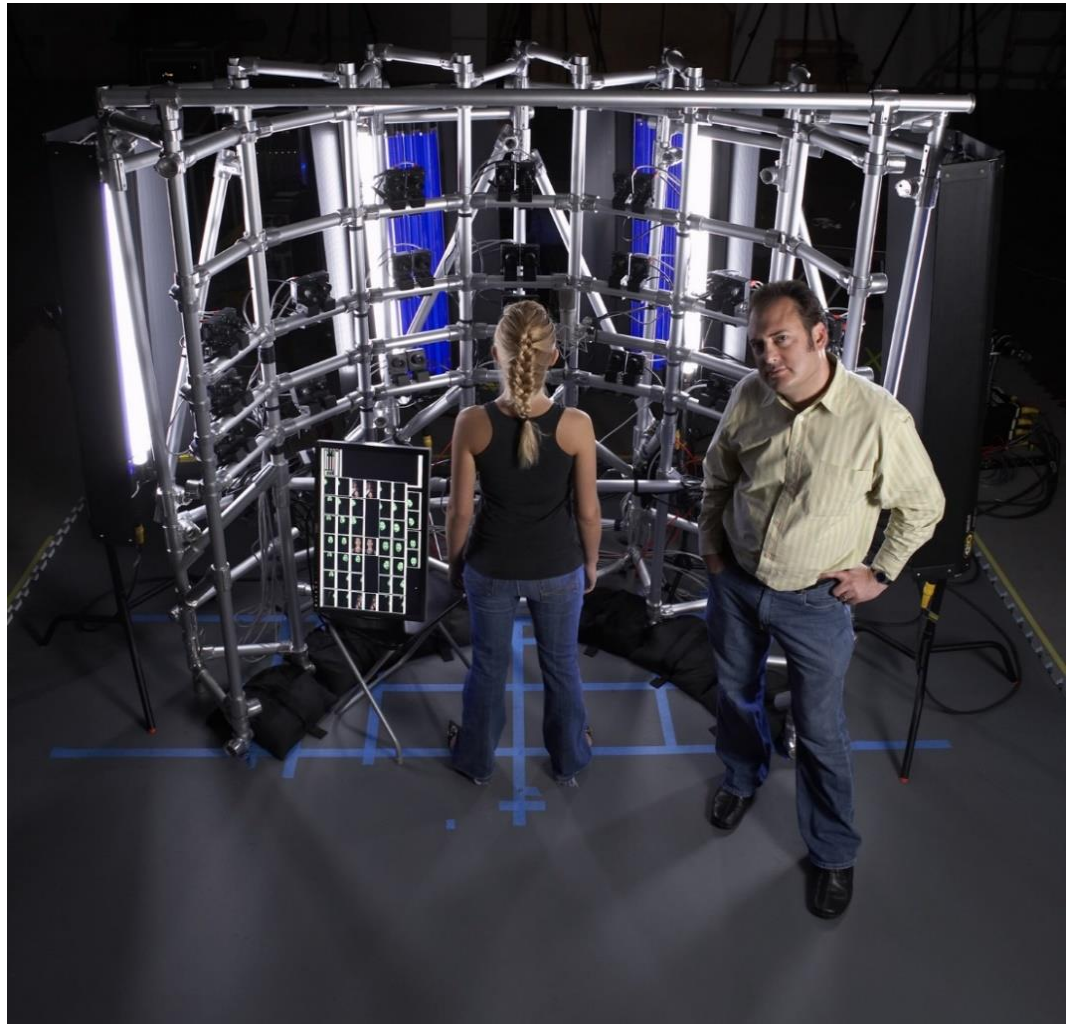
from every angle

1 57. In addition to transforming an actor's age, the same process can be used for many
2 other VFX purposes, such as transforming an actor's face into a creature (e.g. the Hulk in defendant
3 Disney's *The Avengers*), or mapping one character's face onto another's (e.g. Rupert Grint (Ron
4 Weasley) was transformed into Daniel Radcliffe (Harry Potter) in *Harry Potter and the Deathly
5 Hallows, Part I*).

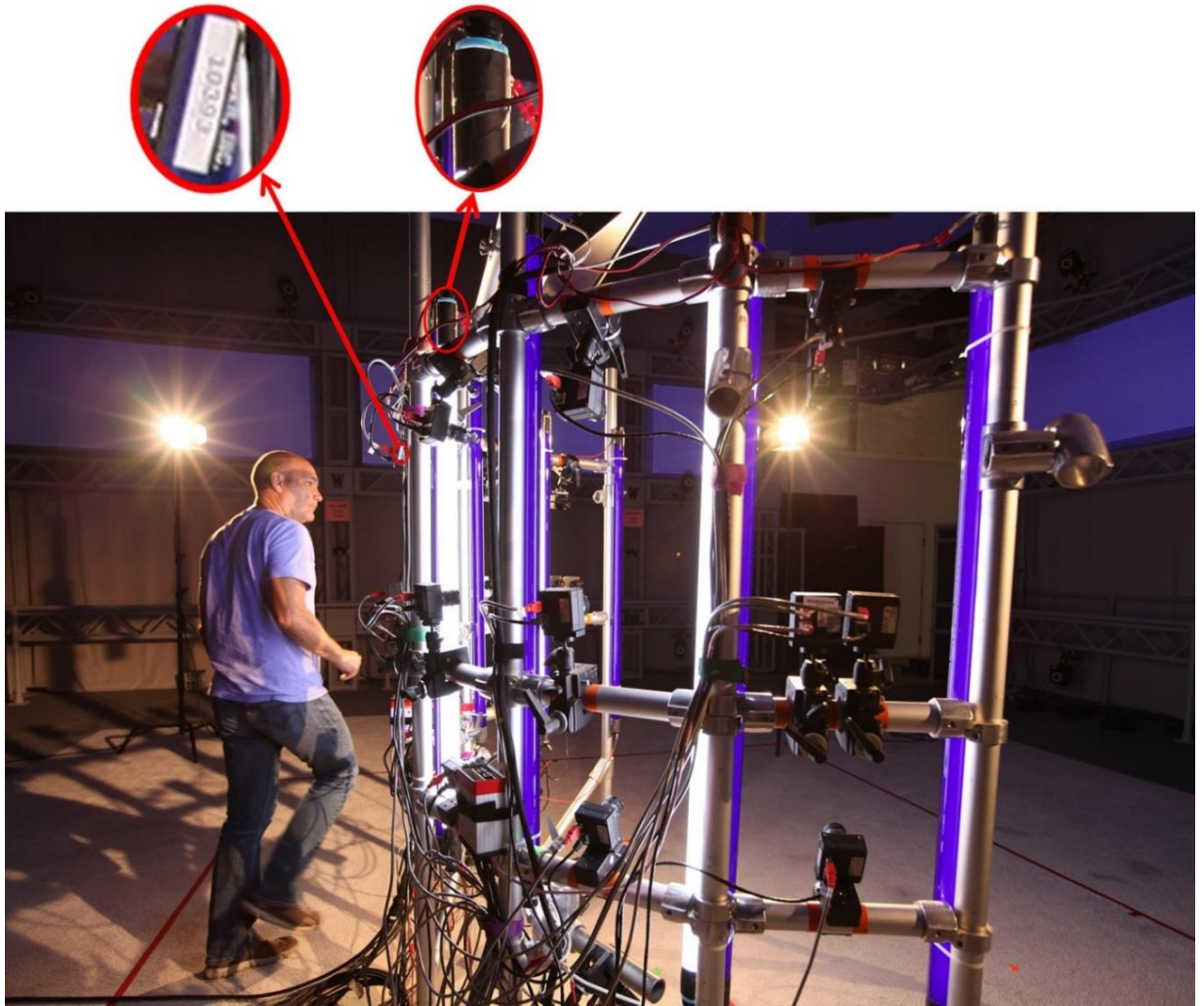
6 58. The following four photographs show the arc-shaped Contour apparatus, two
7 pluralities of synchronized cameras, white light and ultraviolet light sources, computers running the
8 Contour program, and actors wearing the phosphor-based makeup of the Contour systems and
9 methods, used lawfully by defendants and operated by Rearden and its controlled entities in *TRON:
10 Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and *The
11 Avengers* (2012) (Mr. Perlman appears at the right in the last photograph):







59. And the following photograph released by Digital Domain shows the stolen Contour apparatus that was operated by the thieves and used unlawfully by defendants in at least *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*. Close inspection of the photo shown in the left inset, shows the thieves neglected to remove a Rearden asset tag on one of the stolen cameras. Rearden Asset #10393 is a Basler 102f Camera, Serial # 20606024, purchased on October 1, 2006 and stolen in 2013 along with the Contour program. Also, numerous tell-tale details specific to Contour's operation are visible in the stolen Contour apparatus photograph (e.g. the right inset shows black tape is wrapped around the end of a fluorescent lamp tube to prevent light spillage from the glowing electrode, a Contour-specific technique taught in Rearden's US Patent 7,567,293 at 19:66-20:15), confirming that the thieves used the identical Rearden system and methods:



60. The Contour system has no “operating manual.” It is a hand-built system, the operation of which is known only by Rearden’s MOVA team who invented it and Rearden’s MOVA employees and contractors who have been trained to use it under strict confidentiality obligations. It was not intended to be an end-user system and must be used carefully with knowledge of its operation for it to function correctly and safely. Defendants were able to use the Contour system only because they had contracted with DD3, which had hired the rogue former Rearden employees who orchestrated the theft to operate Rearden’s Contour system without authorization.

B. The Contour intellectual property

61. The Contour computer program is the subject of United States Copyright Registration No. TXu001977151, a copy of which is attached hereto as Exhibit 1. Plaintiff Rearden Mova is the

owner of Copyright Registration No. TXu001977151. The Contour program runs on computers that are part of the Contour apparatus.

62. The Contour methods and systems are the subject of issued United States Patent Nos. 7,605,861 (the “’861 Patent”), 8,659,668 (the “’668 Patent”), 7,548,272 (the “’272 Patent”), 7,567,293 (the “’293 Patent”), and 8,207,963 (the “’963 Patent”) (copies are attached as Exhibits 2, 3, 4, 5 and 6), as well as numerous United States pending patent applications, and international patents and patent applications. Plaintiff Rearden Mova is the exclusive owner of the ’861, ’668, ’272, ’293, and ’963 patents, as well as all other domestic patent applications and all international patents and patent applications drawn to the Contour systems and methods. The Contour apparatus and methods are embodiments of the claims of the ’861, ’668, ’272, ’293 and ’963 patents.

63. MOVA® and Contour® are the subject of United States Trademark Registration Nos. U.S. Registration No. 3,843,152 and U.S. Registration No. 3,628,974, respectively. Copies of these registrations are attached hereto as Exhibits 7 and 8.

64. The Contour systems and methods include know-how: confidential information that derives independent economic value, both actual and potential, from not being generally known to the public or other persons who can obtain economic value from its disclosure and use. The Contour confidential information includes, without limitation:

- the source code and object code used in operating the Contour physical assets;
- many specific functionally-designed mechanisms, such as determining when part of the face is obstructed from the view of certain cameras and seamlessly filling in those parts of the face with views from other cameras;
- certain of the processes used along with the Contour physical assets, such as the timing configurations for the Contour system;
- sequencing the steps of calibration, aperture adjustment and focus adjustment of the Mova cameras;
- specific phosphor-based makeup formulations;
- techniques for applying makeup to performers being captured;

- 1 ▪ specific electrical set up safety measures of the Contour apparatus;
- 2 ▪ specific electrical modification of fluorescent light ballasts so as to operate safely;
- 3 ▪ specific performer medical considerations, such as, in the case of performers receiving Botox
- 4 treatments for facial wrinkles, scheduling shoots in specific intervals relative to their
- 5 treatments to maintain natural skin motion;
- 6 ▪ specific instructions to performers on how to perform in such a way to keep their faces within
- 7 the capture volume;
- 8 ▪ specific instructions to performers for specialized moves, such as singing, or bending the
- 9 head downward and upward, with the face going out of and then back into view of the
- 10 cameras; and
- 11 ▪ information regarding Rearden's and Rearden's controlled entities' prior customer
- 12 relationships and business terms.

13 65. Rearden and Rearden Mova have protected this confidential information by, *inter*
 14 *alia*, maintaining email, documents, source and object code, and other software in secure locations;
 15 controlling access to these locations; and by including confidentiality provisions in its agreements
 16 with all of its employees and contractors who have ever had access to any source code, object code,
 17 other software, electrical set up, proprietary electrical circuit designs, timing systems, interconnects,
 18 makeup formulations, phosphor research, results of proprietary tests, etc. The following
 19 confidentiality provisions of a Rearden employment agreement (Rearden referenced as "the
 20 Company"), are representative of those in all other Rearden employment and contractor agreements:

- 21 ▪ "At all times, both during my employment by the Company and after its termination, I will
- 22 keep in confidence and trust and will not use or disclose any Proprietary Information or
- 23 anything relating to it without the prior written consent of an officer of the Company..."
- 24 ▪ "I agree that during my employment by the Company I will not remove any Company
- 25 Documents and Materials from the business premises of the Company or deliver any
- 26 Company Documents and Materials to any person or entity outside the Company, except as I
- 27 am required to do in connection with performing the duties of my employment. I further
- 28

1 agree that, immediately upon the termination of my employment by me or by the Company
 2 for any reason ... I will return all Company Documents and Materials, apparatus, equipment
 3 and other physical property, or any reproduction of such property ...”

4 66. The Contour confidential information constitutes trade secrets as that term is defined
 5 in the California Uniform Trade Secrets Act ("CUTSA") at sections 3426 to 3426.11 of the
 6 California Civil Code, and the Defense of Trade Secrets Act at 18 U.S.C. § 1832(b), *et seq.*

7 67. The “Contour Assets” at issue herein include the Contour technology, and related
 8 hardware and software, source code, domestic and international patents and patent applications,
 9 domestic and international trademarks, copyrights, trade secrets, domain names, business records,
 10 and various related physical goods (the “Contour Assets”).

11 **C. Rearden’s use of the Contour program, system, and methods in fifteen major motion**
 12 **pictures, and industry acclaim**

13 68. Rearden and/or its controlled affiliates operated the Contour system for, and
 14 authorized use of its system, methods and Contour program output works by Paramount Pictures for
 15 “*The Curious Case of Benjamin Button*” (2008) and *Transformers: Dark of the Moon* (2011).

16 69. Rearden and/or its controlled affiliates operated the Contour system for, and
 17 authorized use of its system, methods and Contour program output works by Universal Studios in
 18 *The Incredible Hulk* (2008) and *Snow White and the Huntsman* (2012).

19 70. Rearden and/or its controlled affiliates operated the Contour system for, and
 20 authorized use of its system, methods and Contour program output works by 20th Century Fox in
 21 *Percy Jackson and the Olympians: The Lightning Thief* (2010).

22 71. Rearden and/or its controlled affiliates operated the Contour system for, and
 23 authorized use of its system, methods and Contour program output works by Sony Pictures in *The*
 24 *Amazing Spider-Man* (2012).

25 72. Rearden and/or its controlled affiliates operated the Contour system for, and
 26 authorized use of its system, methods and Contour program output works by Warner Brothers
 27
 28

1 Studios in *Harry Potter and the Deathly Hallows*, Part 1 (2010) and Part 2 (2011), *Green Lantern*
 2 (2011), *Jack the Giant Slayer* (2013), and *Gravity* (2013).

3 73. And Rearden and/or its controlled affiliates operated the Contour system for, and
 4 authorized use of its system, methods and Contour program output works by defendants Disney
 5 Company and Disney MPG in *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides*
 6 (2011), *John Carter* (2012), and *The Avengers* (2012) (including defendant Marvel).

7 74. In each of the above fifteen films, the motion picture studios performed a routine
 8 intellectual property due diligence prior to contracting with Rearden for use of the Contour systems
 9 and methods, in part to verify that Rearden and/or Rearden-controlled affiliates owned the Contour
 10 Assets and technology and had the right to use them for the benefit of the studios.

11 75. Rearden and/or Rearden-controlled affiliates have built considerable good will in the
 12 Contour Assets and technology. Rearden and/or Rearden-controlled affiliates used the Contour
 13 systems and methods in the fifteen major motion pictures identified above, which collectively
 14 grossed roughly \$9.5 billion in global box office. Five of these movies are in the top-25 highest-
 15 grossing movies since 2008 (when the first Contour movie was released), including the number one
 16 highest grossing movie in each of 2011 and 2012²⁰. The Contour system and methods and the
 17 Contour program have been the subject of numerous motion picture industry press articles in which
 18 movie industry luminaries like director David Fincher have lauded the Contour technology:

19 “Contour’s promise is enormous,” Fincher said. “The notion that the
 20 human face in all its subtleties could be mapped in real time and with
 21 such density of surface information opens up so many possibilities for
 both two- and three-dimensional image makers and storytellers.”²¹

22 The Contour system and methods and the Contour program have been the subject of an invited
 23 presentation by Steve Perlman to the Director’s Guild of America²², and they were identified as a
 24 “breakthrough” in the aforementioned TED talk²³. Contour’s improvements over prior facial

25 ²⁰ www.boxofficemojo.com.

26 ²¹ Marlowe, July 31, 2006, *op. cit.*

27 ²² Directors Guild of America, July 28, 2007, *op. cit.*

28 ²³ *Op. cit.*

1 performance capture technologies have been acclaimed by major motion picture actors, producers,
2 directors, and top VFX professionals, including Ed Ulbrich in his TED Talk description of Contour
3 and how it was essential in the creation of *The Curious Case of Benjamin Button*.²⁴ And on
4 February 9, 2015, the Academy of Motion Picture Arts and Sciences awarded the Scientific and
5 Technical Award to the MOVA [Contour] facial performance capture system.²⁵

6 **D. Transfer of the Contour Assets to OnLive, Inc., OL2, Inc., and Rearden Mova**

7 76. Rearden's Contour assets and apparatus (called the "Contour Assets" herein) as well
8 as Rearden's other motion capture assets, along with videogame streaming technology, was spun out
9 of Rearden in 2007 into OnLive, Inc., a corporation controlled by Rearden. OnLive, Inc. thereafter
10 owned all of the Contour Assets, both Contour and other motion capture technology.

11 77. On August 17, 2012, OnLive, Inc. assigned all of its assets, including the Contour
12 Assets, to OL2, Inc. as part of an assignment for the benefit of creditors ("ABC"). On information
13 and belief, OL2, Inc. was primarily focused on the video gaming unit of OnLive, Inc., and was not
14 interested in offering any Contour movie production services.

15 78. In October of 2012, Rearden learned that OL2, Inc. was interested in selling the
16 Contour Assets and apparatus, and Rearden ultimately decided to reacquire them. Rearden formed a
17 wholly-owned subsidiary, MO2 LLC, as a vehicle to acquire the Contour Assets from OL2, Inc.

18 79. Rearden's CEO Perlman tasked his employee Greg LaSalle with management of
19 MO2 LLC. LaSalle had worked with Rearden from 1999 to 2007, and between 2007 and August 17,
20 2012 worked for OnLive, Inc. LaSalle was rehired by Rearden LLC on August 20, 2012.

21 80. On February 11, 2013, OL2, Inc. transferred the Contour Assets to MO2 LLC through
22 a Membership Interest and Asset Purchase and Sale Agreement. MO2 LLC is wholly owned by
23 Rearden.

24 81. On April 19, 2013, MO2 LLC transferred the Contour Assets to another wholly-
25 owned Rearden company, plaintiff Rearden Mova LLC.

26
27 ²⁴ Ulbrich, *Op. cit.*

28 ²⁵ <http://oscar.go.com/news/oscar-news/150209-ampas-sci-tech-awards-2015-winners>

1 82. On September 18, 2014, Rearden recorded patent assignments for the Contour Asset
2 patents, reflecting the assignment from OL2, Inc. to MO2 LLC made in the Membership Interest and
3 Asset Purchase and Sale Agreement.

4 83. Rearden also recorded patent assignments for the Contour Asset patents, reflecting the
5 assignment from MO2 LLC to Rearden Mova on April 19, 2013. However, the execution dates of
6 the online forms were incorrectly filled in with the recordation dates of September 18, 2014 (and in
7 one case, September 8, 2014). As soon as it became aware of the errors, Rearden corrected the
8 erroneous execution dates to the correct date: April 19, 2013.

9 **E. Shenzhenshi's transparently false ownership claims**

10 84. Unknown to Rearden, starting in October 2012, rogue Rearden employee LaSalle was
11 in negotiation with a company called Digital Domain 3.0, Inc. ("DD3"), then a People's Republic of
12 China and India-owned Delaware Corporation doing business in Venice Beach, California under
13 "DD3" or "Digital Domain" business names. DD3 is a successor company to prior Digital Domain
14 companies that Rearden, OnLive, Inc., and LaSalle (on behalf of Rearden and OnLive, Inc.) had
15 worked with previously in movie productions making authorized use of the Contour technology
16 identified above. DD3 is currently wholly-owned by Digital Domain Holdings Ltd. ("DDHL"), a
17 Hong Kong exchange-listed Bermuda corporation with its principal place of business in Hong Kong.

18 85. On February 20, 2015, Shenzhenshi Haitiecheng Science and Technology Co., Ltd.
19 ("Shenzhenshi"), allegedly another People's Republic of China corporation with its purported
20 principal place of business in Shenzhen, China, filed a declaratory judgment action against Rearden
21 and various other Rearden entities in this judicial district, Case No. 3:15-cv-00797-JST, alleging that
22 it had acquired the Contour Assets by assignment from MO2 LLC on May 8, 2013. Shenzhenshi
23 further alleged that it had granted an exclusive license to the Contour Assets to DD3.

24 86. But as set forth above, MO2 LLC did not own the Contour Assets on May 8, 2013, so
25 it could not have assigned them to Shenzhenshi on that date. Rather, MO2 LLC had previously
26 assigned the Contour Assets to Rearden Mova LLC on April 19, 2013. Further, on May 8, 2013
27 LaSalle was not a Rearden employee, and as an employee or not, LaSalle never had authority to sell
28

1 the MO2 LLC Assets to anyone. Nor could Shenzhenshi have granted a license of the Contour
 2 Assets to Digital Domain because it never owned the Contour Assets. Shenzhenshi, DD3 and LaSalle
 3 knew that the MO2-Shenzhenshi transaction was a ruse. LaSalle wrote to his attorneys, “[DD3] are
 4 going to actually acquire the Contour Assets through one of their Chinese companies [Shenzhenshi].
 5 I believe this is so it would be nearly impossible for Steve [Perlman] to go after them....They will
 6 indemnify me against any claims brought by Rearden and Steve Perlman.”²⁶

7 87. The day after the Court granted Rearden permission to file counterclaims, a company
 8 called Virtue Global Holdings, Ltd., a British Virgin Islands corporation, suddenly appeared in the
 9 Shenzhenshi case represented by Shenzhenshi’s counsel. Shenzhenshi absconded from the litigation.
 10 Months later Virtue Global Holdings alleged that Shenzhenshi had assigned the Contour Assets to
 11 Virtue Global Holdings on December 17, 2015. But again, as set forth above, Shenzhenshi never
 12 owned the Contour Assets and therefore could not have assigned them to Virtue Global Holdings.

13 88. Rearden asserted counterclaims for declaratory relief against Shenzhenshi and Virtue
 14 Global Holdings affirming Rearden’s ownership of the Contour Assets, and for patent, trademark,
 15 and copyright infringement, misappropriation of trade secrets, fraudulent transfer, and other causes
 16 of action, against Shenzhenshi and Virtue Global Holdings.

17 89. The Contour Asset ownership and fraudulent transfer claims were bifurcated and tried
 18 in December, 2016. On August 11, 2017, the Court entered a statement of decision in Rearden’s
 19 favor. It found that Rearden had at all material times been the owner of the Contour Assets,
 20 apparatus and program.

21 **F. Defendants’ unauthorized use of the Contour Assets**

22 90. Once LaSalle was hired by DD3 in or about May, 2013, DD3 took possession of the
 23 patented Contour Assets for Shenzhenshi. On information and belief, LaSalle had access to the
 24 secure storage facility where the Contour Assets were kept, and assisted DD3 in taking unauthorized
 25 possession of the patented Contour apparatus and copies of the copyrighted Contour program.

26 ²⁶ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, HEYL001594.

1 91. Thereafter, DD3 began secretly offering Contour facial performance capture services
 2 and Contour program output works to motion picture studios and production companies, including
 3 defendants. The system used by DD3 is the *system* developed and constructed by Rearden and stolen
 4 by DD3 from the secure storage facility, which includes commercial embodiments of the system
 5 claims in the Contour patents. And the statements by *Beauty and the Beast* co-stars Stevens and
 6 Watson, and Director Condon, confirm that DD3 performed the *methods* that are the commercial
 7 embodiments of the method claims of the Contour patents.²⁷

8 92. But even before Shenzhenshi allegedly acquired the Contour Assets, and before DD3
 9 began offering Contour facial performance capture services and output works, Disney and DD3 were
 10 in negotiation to acquire the Contour Assets. LaSalle testified that from “September of 2012...
 11 [u]ntil sometime in April of 2013” he spoke to “The CTO of the Walt Disney Company,”
 12 “[s]omebody at Industrial Light and Magic²⁸, and the president of Digital Domain” about “potential
 13 partnerships or acquisitions of [the] Mova [Assets]”²⁹. Ken Pearce, LaSalle’s accomplice and
 14 another rogue Rearden former employee, testified that “after October 2nd[, 2012] – [he] talked with
 15 ILM and Disney about the Mova assets”³⁰. LaSalle testified that his “discussions with Digital
 16 Domain, Industrial Light and Magic and Walt Disney” were exclusively “about licensing or
 17 acquiring [the Mova asset].”³¹ Former DD3 Chairman Seah Ang testified that in “early 2013”, then
 18 DD3 CEO Ed Ulbrich told him that “Mova is for sale and ... if we don’t take this asset, this asset
 19 will soon go to our competitor ... Industrial Light & Magic, and also Disney.”³² On February 1,
 20 2013, Pearce emailed Disney’s Chief Technical Officer, Andy Hendrickson, to set up a conference to
 21
 22
 23

24 ²⁷ Paris Press Conference, Feb 17, 2017. *Op. cit.*

25 ²⁸ Industrial Light & Magic, AKA ILM, was acquired by the Walt Disney Company in late 2012.

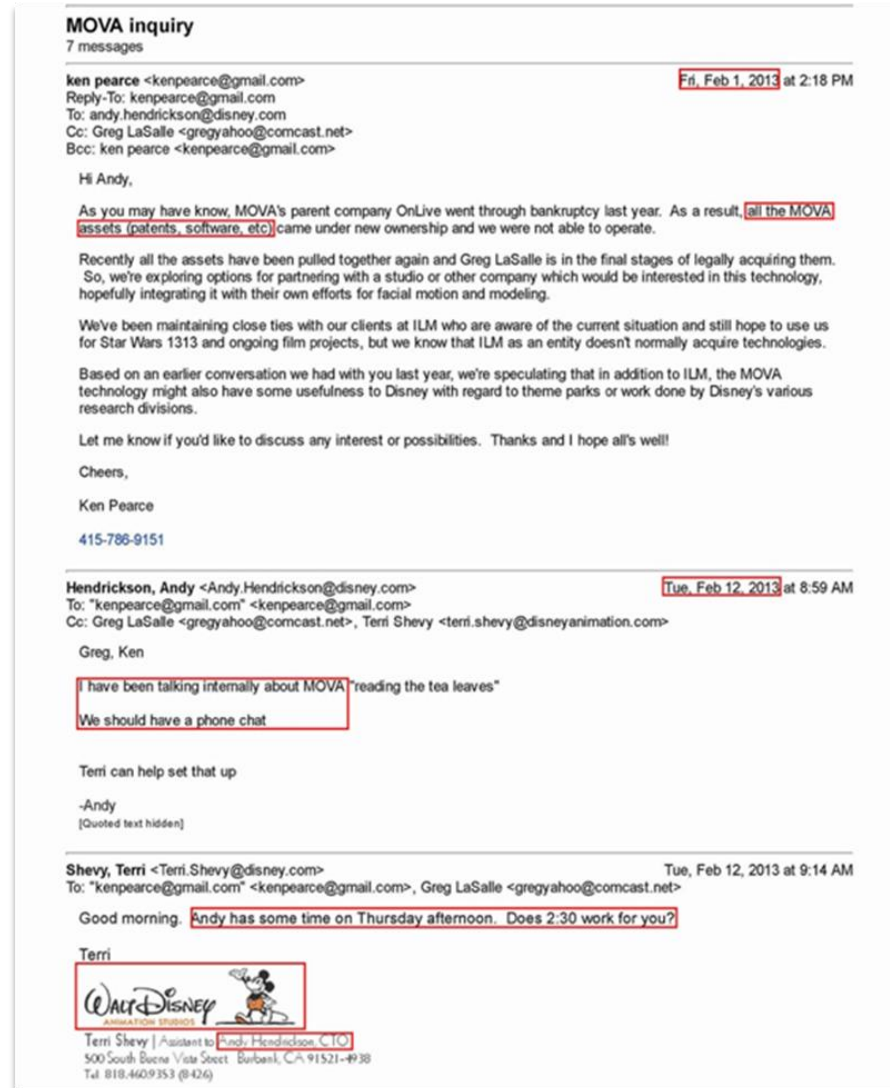
26 ²⁹ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt. 385 at 148-149.

27 ³⁰ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt. 385 at 69.

28 ³¹ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt. 383 at 168:169.

³² *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt. 385 at 88.

discuss Disney acquiring “all the MOVA assets (patents, software, etc.).” Hendrickson had been talking internally at Disney “about MOVA,” and agreed to confer with LaSalle on February 14³³.



93. On March 27, 2013, Rearden wrote LaSalle a demand letter (the “Rearden Demand Letter”) asserting that LaSalle was contractually-obligated to return to Rearden “performance motion capture intellectual property,” which LaSalle was then in negotiations to sell to Disney and which Disney knew included at least “patents” and “software.”³⁴

³³ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, SHST0007127. Red highlighting boxes added.

³⁴ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, HEYL000306-HEYL000307 (Red highlighting boxes added).

software, despite the fact that it knew that Rearden had owned and claimed to still own the Contour Assets that included patents and other intellectual property, and it knew that Rearden had asserted in the demand letter that LaSalle was unlawfully in possession of the Contour Assets, defendant Disney MPG nonetheless contracted, either directly or through entities subject to its supervision and control, for and used the Contour Assets on at least three major motion pictures *without ever contacting Rearden*.

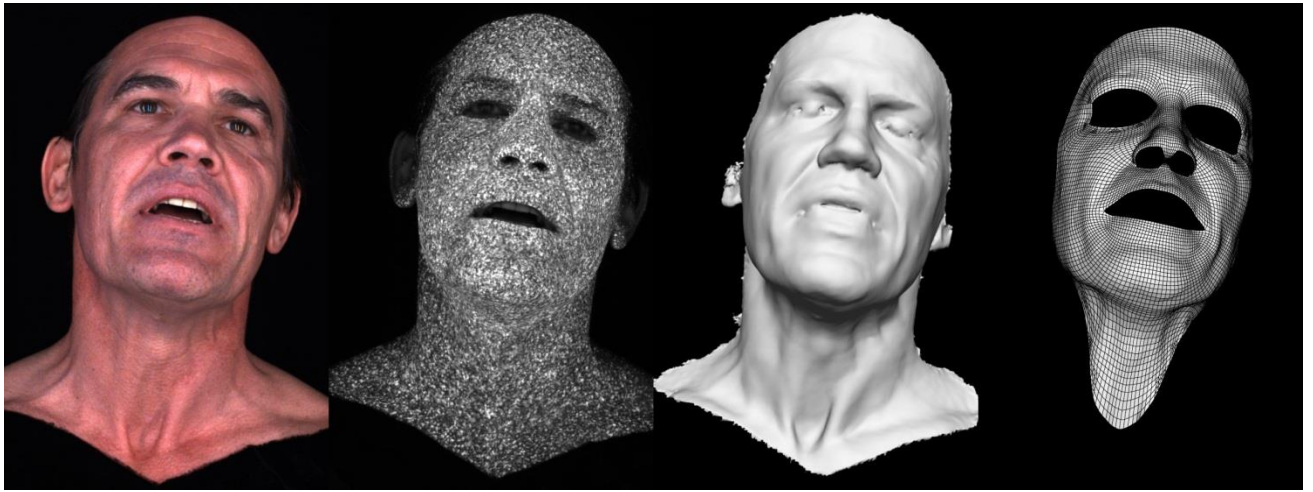
1. *Guardians of the Galaxy*

96. *Guardians of the Galaxy* is a motion picture produced by defendant Marvel subject to the supervision and control of defendant Disney MPG. At all material times, defendants Disney MPG and Marvel were dominated and controlled by defendant Disney Company.

97. On information and belief, between February, 2013 and July, 2014, Disney MPG, either directly or through an entity subject to its supervision and control, contracted with DD3 to provide facial performance capture services and output works made with the patented Contour systems and methods and the copyrighted Contour program, including at least the performance of actor Josh Brolin as the character Thanos in *Guardians of the Galaxy*.

98. Disney MPG, through its employees and agents, reviewed color and grayscale Contour output works capturing Brolin's performance and bearing Rearden's copyright notice on the first frame. The below images show still frames from Contour output works capturing one of Brolin's performances. They are, left to right, one of three Skin Texture output works, one of twenty-two Makeup Pattern output works, one Captured Surface output work, and one Tracking Mesh output work. *Each* of the *twenty-five* Skin Texture and Makeup Pattern Contour output works of *each* *capture* of Brolin's performance bears Rearden's Contour copyright notice on its first frame. And, there were many captures of Brolin's performance. Thus, any review of Brolin's captures would have resulted in Disney MPG, through its employees and agents, seeing a vast number of Rearden copyright notices, each bearing the year, date, and time of the capture, constantly reminded that

Rearden LLC was asserting its copyright in the Contour program and the Contour program works from the Brolin capture sessions.



99. At all material times, DD3 provided Contour facial performance capture services subject to the terms of its contract with, and subject to the supervision and control of, defendant Disney MPG. Each time that DD3 operated the Contour system, whether to capture performances or to process the captured performances into 3D output works, the computers made a copy of the Contour program in their central processing unit's ("CPU") random access memory ("RAM") without authorization from Rearden. Disney MPG incorporated the output works of the patented Contour systems and methods and copyrighted Contour program to animate CG characters that were reproduced, distributed, displayed, and performed in *Guardians of the Galaxy*. The following photograph was used by Disney MPG to promote the use of the Contour facial motion capture technology in the film, followed by a close-up of the Thanos character's face:



100. Defendant Disney MPG knew or should have known that the patented Contour systems and methods and copyrighted Contour program were owned by Rearden and/or other Rearden-controlled entities because:

- Disney MPG had been notified that the Contour Assets included at least “patents” and “software.”

- 1 ▪ Disney MPG, through its employees and agents, reviewed color and grayscale Contour
- 2 output works that were consistently and extensively marked with Rearden's Contour
- 3 copyright notice.
- 4 ▪ Disney MPG was notified of the Rearden Demand Letter, which confirmed that Rearden
- 5 employee LaSalle was unlawfully in possession of the Contour Assets. Upon conducting due
- 6 diligence, Disney MPG had dropped out of the running to acquire the Contour Assets.³⁷
- 7 ▪ Disney MPG had previously contracted with Rearden and/or its controlled entities to provide
- 8 authorized facial performance capture services and Contour program output works for use in
- 9 *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter*
- 10 (2012), and *The Avengers* (2012) (including defendant Marvel), and had performed
- 11 intellectual property due diligence.
- 12 ▪ Disney MPG performed intellectual property due diligence when it contracted with DD3 to
- 13 provide Contour facial performance capture and output works. Based upon its due diligence,
- 14 Disney MPG knew or should have known that DD3 did not have the right to offer or provide
- 15 facial performance capture services and output works made using the patented Contour
- 16 system and copyrighted Contour program.

17 101. Neither Rearden nor Rearden Mova authorized use of the patented Contour systems
 18 and methods and copying of the copyrighted Contour program by DD3, defendant Marvel, defendant
 19 Disney MPG, or any other party in *Guardians of the Galaxy*.

20 102. Defendant Disney MPG released *Guardians of the Galaxy* in domestic theaters on
 21 July 21, 2014. To date, the film has grossed over \$333 million at the box office in the United States
 22 and \$773 million globally.³⁸ It was the third highest-grossing film released in 2014, both
 23 domestically and worldwide.³⁹

24
 25
 26 ³⁷ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt: 383, p. 169, *op. cit.*

27 ³⁸ <http://www.boxofficemojo.com/movies/?id=marvel2014a.htm>.

28 ³⁹ <http://www.boxofficemojo.com/yearly/chart/?yr=2014>,
<http://www.boxofficemojo.com/alltime/world/>.

1 103. Defendant Buena Vista released *Guardians of the Galaxy* on DVD and Blu-ray, and
 2 via digital distribution such as download and streaming services in the United States on or about
 3 December 9, 2014. DVD and Blu-ray sales in the United States exceeded \$131 million. Buena Vista
 4 also authorized distribution of *Guardians of the Galaxy* across a wide range of other distribution
 5 means, such as on airplanes, in hotels, through cable and satellite television services, *etc.*

6 **2. *Avengers: Age of Ultron***

7 104. *Avengers: Age of Ultron* is a motion picture produced by defendant Marvel subject to
 8 the supervision and control of defendant Disney MPG. At all material times, defendants Disney
 9 MPG and Marvel were dominated and controlled by defendant Disney Company.

10 105. On information and belief, between May 2013 and April 2015, Disney MPG, either
 11 directly or through an entity subject to its supervision and control, contracted with DD3 to provide
 12 facial performance capture services and output works made with the patented Contour systems and
 13 methods and the copyrighted Contour program, including at least Josh Brolin's reprisal of the
 14 Thanos character.

15 106. Disney MPG, through its employees and agents, reviewed color and grayscale
 16 Contour output works capturing Brolin's performance and bearing Rearden's copyright notice.

17 107. At all material times, DD3 provided Contour facial performance capture services
 18 subject to the terms of its contract with, and subject to the supervision and control of, defendant
 19 Disney MPG. Each time that DD3 operated the Contour system, whether to capture performances or
 20 to process the captured performances into 3D output works, the computers made a copy of the
 21 Contour program in their CPU's RAM without authorization from Rearden. Disney MPG
 22 incorporated the output works of the patented Contour systems and methods and copyrighted
 23 Contour program to animate CG characters that were reproduced, distributed, displayed, and
 24 performed including at least the same Thanos CG character from *Guardians of the Galaxy*, appearing
 25 in the closing credits of *Avengers: Age of Ultron*:
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108. Defendant Disney MPG knew or should have known that the patented Contour systems and methods and copyrighted Contour program were owned by Rearden and/or other Rearden-controlled entities because:

- Disney MPG had been notified that the Contour Assets included at least “patents” and “software.”
- Disney MPG, through its employees and agents, reviewed color and grayscale Contour output works that were consistently and extensively marked with Rearden’s Contour copyright notice.
- Disney MPG was notified of the Rearden Demand Letter, which confirmed that Rearden employee LaSalle was unlawfully in possession of the Contour Assets that Disney knew included at least “patents” and “software.” Upon conducting due diligence, Disney MPG had dropped out of the running to acquire the Contour Assets.⁴⁰
- Disney MPG had previously contracted with Rearden and/or its controlled entities to provide authorized facial performance capture services and Contour program output works for use in *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and *The Avengers* (2012) (including defendant Marvel), and had performed intellectual property due diligence.

⁴⁰ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt: 383, p. 169, *op. cit.*

- 1 ▪ Disney MPG performed intellectual property due diligence when it contracted with DD3 to
- 2 provide Contour facial performance capture and output works. Based upon its due diligence,
- 3 Disney MPG knew or should have known that DD3 did not have the right to offer or provide
- 4 facial performance capture services and output works made using the patented Contour
- 5 system and copyrighted Contour program.

6 109. Neither Rearden nor Rearden Mova authorized use of the patented Contour systems
7 and methods and copying of the copyrighted Contour program by DD3, defendant Marvel, defendant
8 Disney MPG, or any other party in *Avengers: Age of Ultron*.

9 110. Defendant Disney MPG released *Avengers: Age of Ultron* in domestic theaters on or
10 about April 13, 2015. The film has grossed over \$459 million at the box office in the United States,
11 and over \$1.4 billion worldwide.

12 111. Defendant Buena Vista released *Avengers: Age of Ultron* on DVD and Blu-ray, and
13 by digital distribution such as download and streaming services on or about October 2, 2015. DVD
14 and Blu-ray sales in the United States exceed \$79 million. Buena Vista also distributed *Avengers:*
15 *Age of Ultron* across a wide range of other distribution means, such as on airplanes, in hotels,
16 through cable and satellite television services, etc.

17 **3. *Beauty and the Beast***

18 112. *Beauty and the Beast* is a motion picture produced by defendant Disney MPG and
19 defendant Mandeville Films subject to the supervision and control of defendant Disney MPG. At all
20 material times, Disney MPG was dominated and controlled by defendant Disney Company.

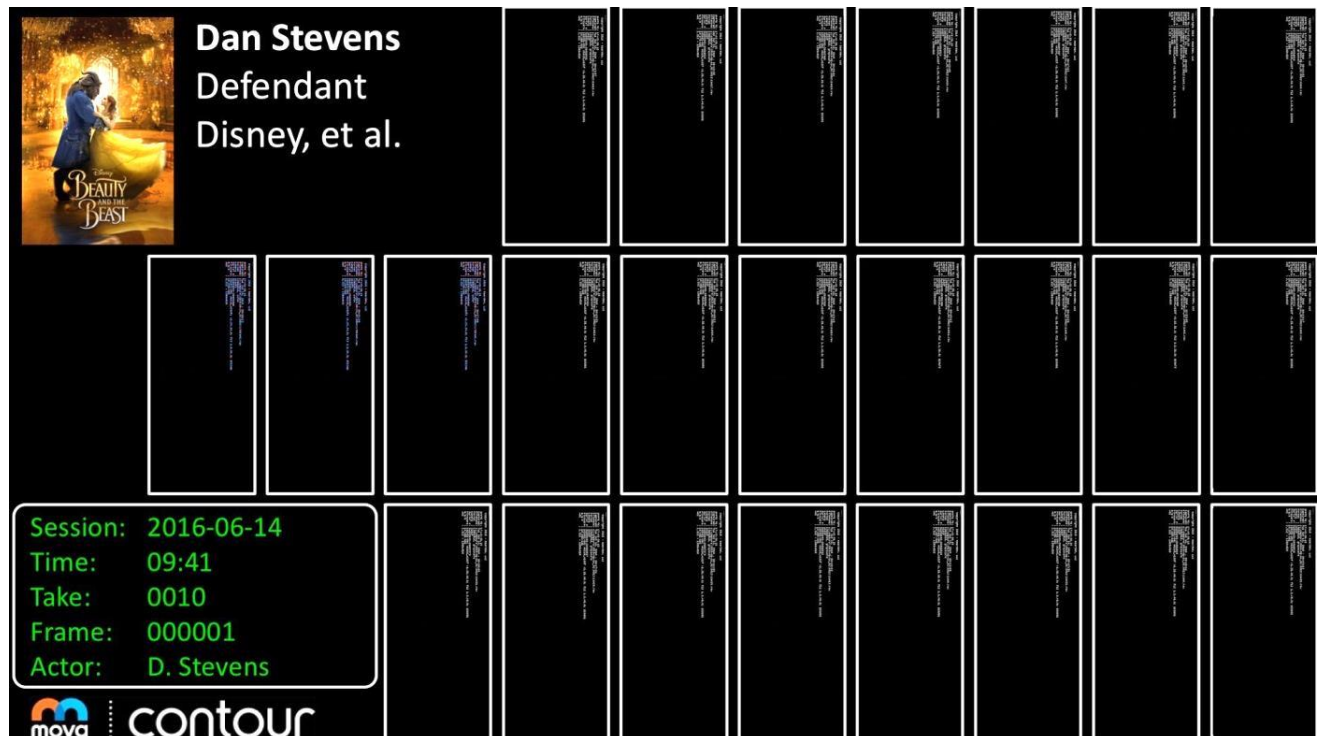
21 113. On information and belief, between February 2013 and March 2017, Disney MPG,
22 either directly or through an agent, contracted with DD3 to provide facial performance capture
23 services and products made using the patented Contour system and methods, and copyrighted
24 Contour program, including at least the performance of actor Dan Stevens as the Beast character.

25 114. Disney MPG, through its employees and agents, reviewed color and grayscale
26 Contour output works capturing Stevens's performance and bearing Rearden's copyright notice.
27
28

115. At all material times, DD3 provided Contour facial performance capture services subject to the terms of its contract with, and subject to the supervision and control of, defendant Disney MPG. Each time that DD3 operated the Contour system, whether to capture performances or to process the captured performances into 3D output works, the computers made a copy of the Contour program in their CPU's RAM without authorization from Rearden. Disney MPG incorporated the output works of the patented Contour systems and methods and copyrighted Contour program to animate CG characters that were reproduced, distributed, displayed, and performed in *Beauty and the Beast*.

116. Defendant Disney MPG knew or should have known that the patented Contour systems and methods and copyrighted Contour program were owned by Rearden and/or other Rearden-controlled entities because:

- Disney MPG was notified that the Contour Assets included at least “patents” and “software.”
- Disney MPG, through its employees and agents, reviewed color and grayscale Contour output works that were consistently and extensively marked with Rearden's Contour copyright notice. For example, the below images shows the Rearden copyright notice of the first frame



of twenty-five Contour output works, with one frame enlarged. This is followed by still images from the second frame of the twenty-five Contour output works, showing the color and grayscale images of the Skin Texture and Makeup Pattern output works.



- Disney MPG was notified of the Rearden Demand Letter, which confirmed that Rearden employee LaSalle was unlawfully in possession of the Contour Assets. Upon conducting due diligence, Disney MPG had dropped out of the running to acquire the Contour Assets.⁴¹

⁴¹ *Shenzhenshi, et al. v. Rearden, et al.*, NDCA Case No. 15-797, Dkt: 383, p. 169, *op. cit.*

- 1 ▪ Disney MPG had previously contracted with Rearden and/or its controlled entities to provide
2 authorized facial performance capture services and Contour program output works for use in
3 *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter*
4 (2012), and *The Avengers* (2012) (including defendant Marvel), and had performed
5 intellectual property due diligence.
- 6 ▪ Disney MPG performed intellectual property due diligence when it contracted with DD3 to
7 provide Contour facial performance capture and output works. Based upon its due diligence,
8 Disney MPG knew or should have known that DD3 did not have the right to offer or provide
9 facial performance capture services and output works made using the patented Contour
10 system and copyrighted Contour program.

11 117. Neither Rearden nor Rearden Mova authorized use of the patented MOVA Contour
12 system and methods, and copying of the copyrighted MOVA Contour program by DD3, defendant
13 Mandeville Films, defendant Disney MPG, or any other party in *Beauty and the Beast*.

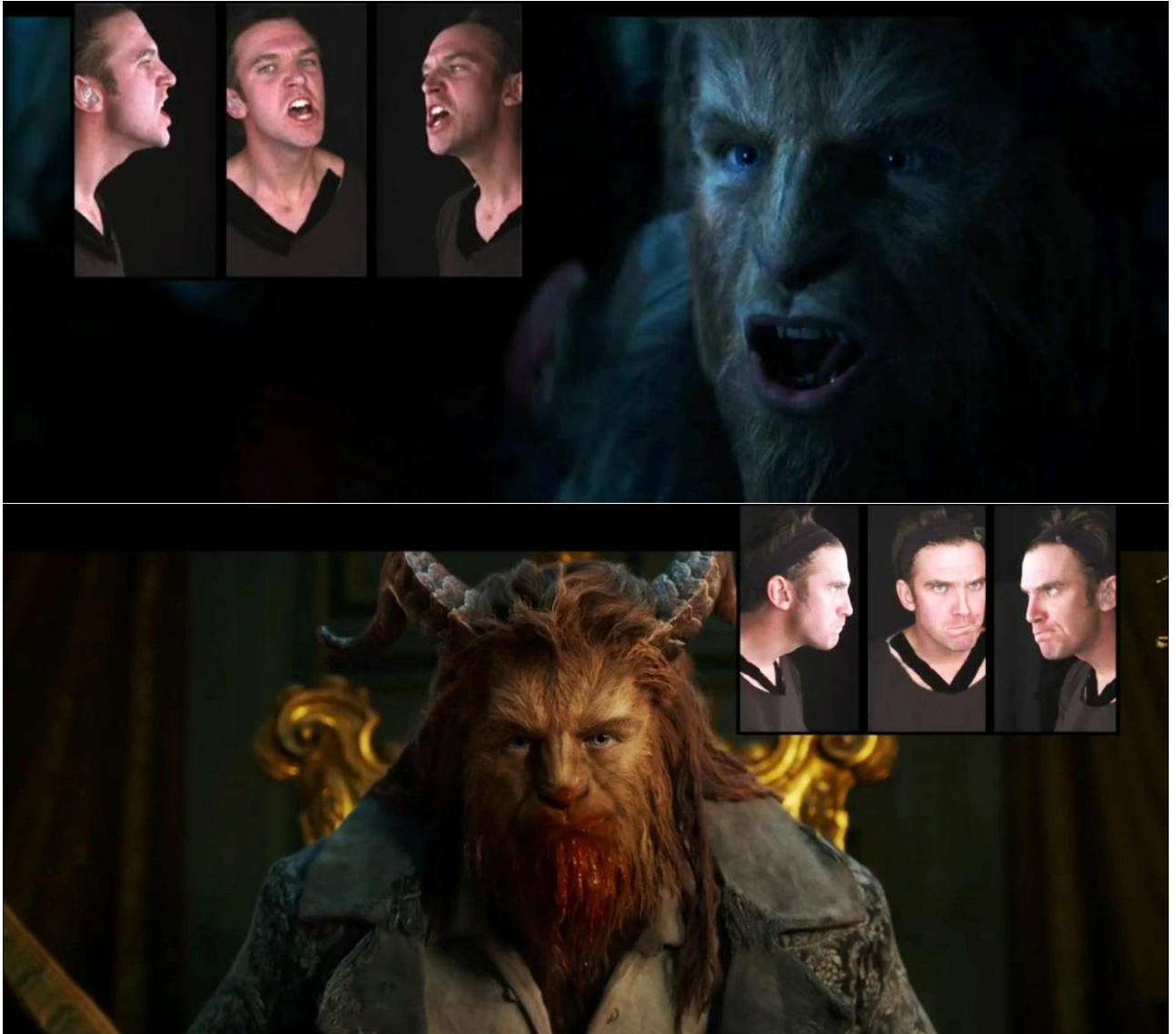
14 118. The photograph below is a still from a video clip in the “*Beauty of a Tale*” featurette,
15 distributed with versions of the *Beauty and the Beast* Blu-ray and through other digital distribution,
16 which shows three views of Beast actor Dan Stevens in the stolen Contour apparatus. A clapperboard
17 in front of his face shows that a facial performance is about to begin. The middle image shows the
18 clapperboard from the front with Mr. Stevens’ forehead visible behind it, the left image shows a side
19 view from left of Mr. Stevens’ face and the left side of the clapperboard, and the right image shows a
20 side view from the right of Mr. Stevens’ face and part of the right side of the clapperboard:
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Mr. Stevens' face had phosphor-based makeup applied to it, which made his face appear to human observers or conventional cameras as having a blue glow. The reason Mr. Stevens' face appears in these three images in its natural skin color, without blue glow, is because these images are not from conventional cameras. They are Contour program Skin Texture output works. But for the MOVA Contour system and methods and the copyrighted Contour program, it would not be possible to capture and record Mr. Stevens's natural skin color. Each of these three Contour program Skin Texture output works originally had a Rearden LLC copyright notice shown in the first frame. Disney MPG, through its agents and employees, removed each frame with a Rearden LLC copyright notice in the Contour program output works shown in the "Beauty of a Tale" featurette. While Disney MPG was thorough in erasing all of Rearden's many Contour copyright notices, it was equally thorough in making sure its own copyright notices were prominently displayed.

119. The two photographs below are stills from a video clip in the "*Beauty of a Tale*" featurette that shows three Skin Texture output works from Contour systems and methods and the copyrighted Contour program. As detailed in the previous paragraph, to human observers and conventional cameras, Mr. Stevens' natural skin color would not be visible, but rather he would appear as having a blue glow covering his entire face and surrounding skin areas. Once again,

1 Disney MPG removed all of Rearden LLC's many copyright notices, while prominently showing its
 2 own copyright notices.



120. The CG image of the Beast above is a retargeting of a Contour Tracking Mesh output
 work. The Captured Surface and Skin Texture output works were likely also used. For example, the
 Skin Texture could be used to locate Mr. Stevens's "eyelines" (the direction his eyes are looking),
 the look of his eyes and the look of his teeth and tongue when his mouth is open. The Makeup
 Pattern and other Contour program output works may have also been used. For example, Contour
 program output works include frame timing files used to synchronize Mr. Stevens's utterances (e.g.

1 dialog lines and roars) with his facial motion. These images are examples of retargeting to a CG 3D
 2 model. A CG 3D model of the Beast's face and head was created and, but for the retargeting from
 3 the Contour program output works, would be immobile and expressionless. But the Contour program
 4 output works retargeted to the CG 3D model brought the Beast's face to life, retaining the
 5 expressiveness, subtlety, and humanity of Mr. Stevens's performance in the CG 3D model. Again,
 6 Disney MPG removed all of Rearden LLC's many copyright notices, while prominently showing its
 7 own copyright notices.

8 121. The photograph below is a still from the "*Beauty of a Tale*" featurette that shows in
 9 the lower left Mr. Stevens performing on set in a scene, and the upper left image shows the Skin
 10 Texture output file of Mr. Stevens re-performing the facial motions of the same scene in the stolen
 11 Contour apparatus. On the right, the CG 3D model of the Beast is shown separately from the body.
 12 As described previously, the Tracking Mesh output work, and likely other Contour output works,
 13 retargeted to the 3D model of the Beast's face, bring the CG 3D model of the Beast to life, while
 14 retaining the expressiveness, subtlety and humanity of Mr. Stevens's performance. Again, Disney
 15 MPG removed all of Rearden many copyright notices, while prominently showing its own copyright
 16 notices.



1 122. The *still* images of video clips in the prior three photographs do not convey the
 2 extraordinary results achieved *in motion*, showing the expressiveness, subtlety and humanity
 3 achieved from the Contour system and methods and the copyrighted Contour program. The video
 4 clip sources for the above stills can be found in the “*Beauty of a Tale*” promotional video Disney
 5 provided to USA Today, which can be viewed here:
 6 [https://www.usatoday.com/story/life/entertainthis/2017/05/29/exclusive-video-how-dan-stevens-was-](https://www.usatoday.com/story/life/entertainthis/2017/05/29/exclusive-video-how-dan-stevens-was-transformed-in-beauty-and-the-beast/102281138/)
 7 [transformed-in-beauty-and-the-beast/102281138/](https://www.usatoday.com/story/life/entertainthis/2017/05/29/exclusive-video-how-dan-stevens-was-transformed-in-beauty-and-the-beast/102281138/)

8 123. Defendant Disney MPG released *Beauty and the Beast* in domestic theaters on or
 9 about March 17, 2017. The film has grossed over \$500 million at the box office in the United States,
 10 and over \$1.25 billion globally⁴².

11 124. Defendant Buena Vista released *Beauty and the Beast* on DVD and Blu-ray, and via
 12 digital distribution such as download and streaming services on or about June 6, 2017. Many of the
 13 DVD, Blu-ray and digitally distributed versions of *Beauty and the Beast* included the Bonus
 14 Featurette entitled “*A Beauty of a Tale*” that showed how the Contour system was used in the
 15 creation of the Beast, including Contour program output works. Disney also distributed “*Beauty of a*
 16 *Tale*” showing how Contour was used, including Contour program output works as a promotion for
 17 the DVD, Blu-ray, and digital distribution release on USA Today’s website, where it is publicly
 18 available for streaming over the Internet.⁴³ Disney has earned over many millions of dollars from
 19 DVD, Blu-ray, and digital distribution as of the date of this complaint. Buena Vista also distributed
 20 *Beauty and the Beast* across a wide range of other distribution means, such as on airplanes, in hotels,
 21 through cable and satellite television services.

22 **FIRST CAUSE OF ACTION:**
 23 **VICARIOUS AND CONTRIBUTORY COPYRIGHT INFRINGEMENT**
 24 **(DEFENDANTS DISNEY COMPANY, DISNEY MPG, AND MARVEL)**

25 125. Plaintiffs reallege and incorporate each and every allegation contained in the
 26 paragraphs above with the same force and effect as if they were fully set forth here.

27 ⁴² <http://www.boxofficemojo.com/movies/?id=beautyandthebeast2017.htm>.

28 ⁴³ Truitt, *op. cit.*

Rearden's Copyright in the Contour Program.

126. The Contour program is an original literary work of authorship by Rearden-employed programmers.

127. The Contour program was fixed in a tangible medium of expression when it was stored in non-volatile computer memory and/or media such as computer hard drives, CD, CD-R, DVD, or Blu-ray disks from which it may be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. Accordingly, the Contour program is a proper subject of copyright protection.

128. Rearden's programmers duly assigned their copyrights in the Contour program to Rearden. At all material times, Plaintiff Rearden Mova was and is the owner of United States Copyright Registration No. TXu001977151 for the Contour program.

DD3's Direct Infringement of Rearden's Copyright.

129. Each time that DD3 operated the Contour apparatus, whether for facial performance capture or for processing captures into output works, the computers made an unauthorized copy of the Contour program in their central processing unit's ("CPU") random access memory ("RAM"). Each such copy is a violation of Rearden's exclusive right to authorize copies of its Contour program under 17 U.S.C. § 106 (1), and therefore each copy is an act of direct copyright infringement by DD3.

Defendants' Vicarious Liability for DD3's Infringement⁴⁴

130. Defendant Disney MPG, either directly or through entities subject to its direction and control such as Marvel, contracted with DD3 for facial performance capture services and output works using the Contour program for Disney MPG's films *Guardians of the Galaxy* and *Avengers: Age of Ultron*. At all material times during DD3's performance of the facial performance capture contract, Disney MPG and Marvel were in a position to police DD3 and/or had the right and ability to supervise and control DD3's performance.

⁴⁴ See, e.g., *Oracle America, Inc. v. Hewlett Packard Enterprise Co.*, 2017 WL 2672113, *2-3 (N.D. Cal. Jan. 19, 2017).

1 131. Disney MPG, either directly or through entities subject to its direction and control
2 such as Marvel, initiated and scheduled each facial performance capture session with DD3 using the
3 Contour program.

4 132. For each session, Disney MPG, either directly or through entities subject to its
5 direction and control such as Marvel, supplied performers to provide facial performances for capture
6 by DD3 using the Contour program.

7 133. For each session, Disney MPG, either directly or through entities subject to its
8 direction and control such as Marvel, supplied a director to control and direct the actions of DD3 in
9 providing facial performance capture using the Contour program. Acting as Disney MPG's
10 supervising agent, the director controlled and directed DD3's use of the Contour program by starting
11 and terminating each session, starting and stopping each take, ordering DD3 to provide additional
12 takes, and choosing "Selects" (the Contour capture takes which were deemed "good takes" by the
13 director) for further Contour program processing to create Captured Surface and Tracking Mesh
14 output works, all using the Contour program. So extensive is Disney MPG's directors' supervision
15 and control over the facial motion capture sessions performed by DD3, that defendants contend that
16 the directors' contribution "is substantial and performs 'the lion's share of the creativity' in the facial
17 motion capture," and that consequently the directors are the authors of the results of the facial motion
18 capture.⁴⁵

19 134. For each session, Disney MPG, either directly or through entities subject to its
20 direction and control, provided various film crew to support and facilitate DD3's facial performance
21 capture using the Contour program. Disney MPG relied on the presence of a clapperboard operated
22 by defendants' film crew in images in the original complaint to show that the facial performance
23 sessions were superintended and directed by persons provided by Disney MPG, either directly or
24 through entities subject to its direction and control.⁴⁶

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27 ⁴⁵ See, e.g., Dkt. 36 at 8:16-18; 6:13-16.

28 ⁴⁶ *Id.* at 8:4-15.

1 135. Disney MPG, either directly or through entities subject to its direction and control,
2 received from DD3 and reviewed numerous Contour program output works bearing the Rearden
3 Contour copyright notice.

4 136. After reviewing the Contour program output works from Contour capture takes,
5 Disney MPG, or entities subject to its direction and control such as Marvel, chose specific Contour
6 program output works and designated them as “Selects,” and caused DD3 to use the Contour
7 program to further process the Selects to create new output works that were used to animate CG
8 characters in *Guardians of the Galaxy* and *Avengers: Age of Ultron*, including at least the Thanos
9 character.

10 137. On information and belief, the contract between DD3 and Disney MPG, or entities
11 subject to its direction and control such as Marvel, grants the unrestricted right to cancel “any portion
12 of the Services” provided by DD3, subject only to the duty to pay for costs and services performed
13 before cancellation. Accordingly, Disney MPG, either directly or through entities subject to its
14 direction and control such as Marvel, were in a position to police DD3’s infringing acts. They had
15 the authority and practical ability to observe and evaluate services provided by DD3 and—if
16 defendants deemed those services inadequate, improper, or unlawful—require DD3 to remedy the
17 services or cancel DD3’s provision of services.

18 138. Defendants Disney MPG and Marvel had an obvious and direct financial interest in
19 exploitation of Rearden’s copyright in the Contour program to use the Contour output works to
20 animate CG characters in *Guardians of the Galaxy* and *Avengers: Age of Ultron*, including at least
21 the Thanos character. Disney MPG and Marvel believed that Contour facial performance motion
22 capture would make the Thanos CG character more believable and compelling, which would in turn
23 draw a wider audience to the films.

24 139. At all material times, defendant Disney dominated and controlled defendants Disney
25 MPG and Marvel, and had a substantial and continuing connection with them with respect to the
26 infringing acts alleged herein.

1 140. Accordingly, defendants induced each of DD3's direct infringements of Rearden's
2 copyright in the Contour program during its performance of the *Guardians of the Galaxy* and
3 *Avengers: Age of Ultron* facial performance capture contracts, and are vicariously liable to Rearden
4 for each of DD3's direct infringements.

5 ***Defendants' Contributory Copyright Infringement***⁴⁷

6 141. Disney MPG and Marvel had actual knowledge of DD3's specific acts of
7 infringement, and induced, caused, and materially contributed to DD3's infringement.

8 142. Disney MPG, either directly or through entities subject to its direction and control
9 such as Marvel, contracted with DD3 for facial performance capture services and output works using
10 the Contour program for Disney MPG's films *Guardians of the Galaxy* and *Avengers: Age of Ultron*.

11 143. Disney MPG, either directly or through entities subject to its direction and control
12 such as Marvel, initiated and scheduled each facial performance capture session with DD3 using the
13 Contour program.

14 144. Each of the requests for facial performance captures caused DD3 to use the Contour
15 program, which created an infringing copy of the program for non-transitory duration in the RAM of
16 Contour system computers.

17 145. For each session, Disney MPG, either directly or through entities subject to its
18 direction and control such as Marvel, supplied performers to provide facial performances for capture
19 by DD3 using the Contour program.

20 146. For each session, Disney MPG, either directly or through entities subject to its
21 direction and control such as Marvel, supplied a director to control and direct the actions of DD3 in
22 providing facial performance capture using the Contour program. Acting as Disney MPG's
23 supervising agent, the director controlled and directed DD3's use of the Contour program by starting
24 and terminating each session, starting and stopping each take, ordering DD3 to provide additional
25 takes, and choosing "Selects" (the Contour capture takes which were deemed "good takes" by the
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⁴⁷ See, e.g., *Oracle America, Inc. v. Hewlett Packard Enterprise Co.*, 2016 WL 3951653, *5-6
28 (N.D. Cal. July 22, 2016)

1 director) for further Contour program processing to create Captured Surface and Tracking Mesh
2 output works, all using the Contour program. So extensive is Disney MPG's directors' supervision
3 and control over the facial motion capture sessions performed by DD3, that defendants contend that
4 the directors' contribution "is substantial and performs 'the lion's share of the creativity' in the facial
5 motion capture," and that consequently the directors are the authors of the results of the facial motion
6 capture.⁴⁸

7 147. For each session, Disney MPG, either directly or through entities subject to its
8 direction and control, provided various film crew to support and facilitate DD3's facial performance
9 capture using the Contour program. Disney MPG relied on the presence of a clapperboard operated
10 by defendants' film crew in images in the original complaint to show that the facial performance
11 sessions were superintended and directed by persons provided by Disney MPG, either directly or
12 through entities subject to its direction and control.⁴⁹

13 148. Disney MPG, either directly or through entities subject to its direction and control,
14 received from DD3 and reviewed numerous Contour program output works bearing the Rearden
15 Contour copyright notice.

16 149. After reviewing the Contour program output works from the Contour capture takes,
17 Disney MPG, either directly or through entities subject to its direction and control, chose specific
18 Contour works and designated them as "Selects," and caused DD3 to use the Contour program to
19 further process the Selects to create new output works that were used to animate CG characters in
20 *Guardians of the Galaxy* and *Avengers: Age of Ultron*, including at least the Thanos character.

21 150. Each of defendants' requests for further processing of defendants' selected Contour
22 output works caused DD3 to use the Contour program, which created an infringing copy of the
23 program for non-transitory duration in the RAM of Contour system computers.

24 151. On information and belief, the contract between DD3 and Disney MPG, or entities
25 subject to its direction and control, grants defendants the unrestricted right to cancel "any portion of
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27 ⁴⁸ See, e.g., Dkt. 36 at 8:16-18; 6:13-16.

28 ⁴⁹ *Id.* at 8:4-15.

the Services” provided by DD3, subject only to the duty to pay for costs and services performed before cancellation. Accordingly, defendants were in a position to police DD3’s infringing acts. They had the authority and practical ability to observe and evaluate services provided by DD3 and— if defendants deemed those services inadequate, improper, or unlawful—require DD3 to remedy the services or cancel DD3’s provision of services to defendants but declined to exercise that right.

152. At all material times, defendant Disney dominated and controlled defendants Disney MPG and Marvel, and had a substantial and continuing connection with them with respect to the infringing acts alleged herein.

153. Accordingly, defendants are contributory infringers of Rearden’s copyright in the Contour program, and are liable to Rearden for each of DD3’s direct infringements.

154. The acts of vicarious and/or contributory copyright infringement by defendants were, and are, willful, intentional, purposeful, and knowing, in that defendants at all material times had actual knowledge that the copyright in the Contour program has been, and is, owned by Rearden, or were in reckless disregard of or willfully blind to Rearden’s copyright, and defendants have acted in knowing disregard of and indifference to Rearden’s rights.

155. Rearden has been harmed as the direct and proximate result of the foregoing acts of copyright infringement. Plaintiffs are entitled to actual damages, profits of the infringers, and all such other remedies as may be available under the Copyright Act.

**SECOND CAUSE OF ACTION:
VICARIOUS AND CONTRIBUTORY COPYRIGHT INFRINGEMENT
(DEFENDANTS DISNEY COMPANY, DISNEY MPG,
AND MANDEVILLE)**

156. Plaintiffs reallege and incorporate each and every allegation contained in the paragraphs above with the same force and effect as if they were fully set forth here.

Rearden’s Copyright in the Contour Program

157. The Contour program is an original literary work of authorship by Rearden-employed programmers.

158. The Contour program was fixed in a tangible medium of expression when it was stored in non-volatile computer memory and/or media such as computer hard drives, CD, CD-R,

DVD, or Blu-ray disks from which it may be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. Accordingly, the Contour program is a proper subject of copyright protection.

159. Rearden's programmers duly assigned their copyrights in the Contour program to Rearden. At all material times, Plaintiff Rearden Mova was and is the owner of United States Copyright Registration No. TXu001977151 for the Contour program.

DD3's Direct Infringement of Rearden's Copyright

160. Each time that DD3 operated the Contour apparatus, the computers made an unauthorized copy of the Contour program in their central processing unit's ("CPU") random access memory ("RAM"). Each such copy is a violation of Rearden's exclusive right to authorize copies of its Contour program under 17 U.S.C. § 106 (1), and therefore each copy is an act of direct copyright infringement by DD3.

Defendants' Vicarious Liability for DD3's Copyright Infringement⁵⁰

161. Defendant Disney MPG, either directly or through entities subject to its direction and control such as Mandeville, contracted with DD3 to provide facial performance capture services and output works using the Contour program for Disney MPG's film *Beauty and the Beast*. At all material times during DD3's performance of the facial performance capture contract, Disney MPG and Mandeville were in a position to police DD3 and/or had the right and ability to supervise and control DD3s performance.

162. Disney MPG, either directly or through entities subject to its direction and control such as Mandeville, initiated and scheduled each facial performance capture session with DD3 using the Contour program.

163. For each session, Disney MPG, either directly or through entities subject to its direction and control such as Mandeville, supplied performers to provide facial performances for capture by DD3 using the Contour program.

⁵⁰ See, e.g., *Oracle America, Inc. v. Hewlett Packard Enterprise Co.*, 2017 WL 2672113, *2-3 (N.D. Cal. Jan. 19, 2017).

1 164. For each session, Disney MPG, either directly or through entities subject to its
2 direction and control such as Mandeville, supplied a director to control and direct the actions of DD3
3 in providing facial performance capture using the Contour program. Acting as Disney MPG's
4 supervising agent, the director controlled and directed DD3's use of the Contour program by starting
5 and terminating each session, starting and stopping each take, ordering DD3 to provide additional
6 takes, and choosing "Selects" (the Contour capture takes which were deemed "good takes" by the
7 director) for further Contour program processing to create Captured Surface and Tracking Mesh
8 output works, all using the Contour program. So extensive is Disney MPG's directors' supervision
9 and control over the facial motion capture sessions performed by DD3, that defendants contend that
10 the directors' contribution "is substantial and performs 'the lion's share of the creativity' in the facial
11 motion capture," and that consequently the directors are the authors of the results of the facial motion
12 capture.⁵¹

13 165. For each session, Disney MPG, either directly or through entities subject to its
14 direction and control, provided various film crew to support and facilitate DD3's facial performance
15 capture using the Contour program. Disney MPG relied on the presence of a clapperboard operated
16 by defendants' film crew in images in the original complaint to show that the facial performance
17 sessions were superintended and directed by persons provided by Disney MPG, either directly or
18 through entities subject to its direction and control.⁵²

19 166. Disney MPG, either directly or through entities subject to its direction and control
20 such as Mandeville, received from DD3 and reviewed numerous Contour program output works
21 bearing the Rearden Contour copyright notice.

22 167. After reviewing the Contour program output works from Contour capture takes,
23 Disney MPG, either directly or through entities subject to its direction and control such as
24 Mandeville, chose specific Contour works and designated them as Selects, and caused DD3 to use
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27 ⁵¹ See, e.g., Dkt. 36 at 8:16-18; 6:13-16.

28 ⁵² *Id.* at 8:4-15.

1 the Contour program to further process the Selects to create new output works that were used to
 2 animate CG characters in *Beauty and the Beast*, including at least the Beast character.

3 168. On information and belief, the contract between DD3 and Disney MPG, or entities
 4 subject to its direction and control such as Mandeville, grants the unrestricted right to cancel “any
 5 portion of the Services” provided by DD3, subject only to the duty to pay for costs and services
 6 performed before cancellation. Accordingly, Disney MPG, either directly or through entities subject
 7 to its direction and control such as Mandeville, were in a position to police DD3’s infringing acts.
 8 They had the authority and practical ability to observe and evaluate services provided by DD3 and—
 9 if defendants deemed those services inadequate, improper, or unlawful—require DD3 to remedy the
 10 services or cancel DD3’s provision of services.

11 169. Defendant Disney MPG and Mandeville had an obvious and direct financial interest
 12 in exploitation of Rearden’s copyright in the Contour program to use the Contour output works to
 13 animate CG characters in *Beauty and the Beast*, including at least the romantic lead character Beast.
 14 Disney MPG and Mandeville regarded the Contour program’s faithful tracking of Dan Stevens’s
 15 performance as critical to the believability of the CG Beast character to film-goers, and thus would
 16 draw a wider audience to the film.

17 170. At all material times, defendant Disney dominated and controlled defendants Disney
 18 MPG and Mandeville, and had a substantial and continuing connection with them with respect to the
 19 infringing acts alleged herein.

20 171. Accordingly, defendants induced each of DD3’s direct infringements of Rearden’s
 21 copyright in the Contour program during the *Beauty and the Beast* contract, and are vicariously liable
 22 to Rearden for each of DD3’s direct infringements.

23 ***Defendants’ Contributory Copyright Infringement*⁵³**

24 172. Disney MPG and Mandeville had actual knowledge of DD3’s specific acts of
 25 infringement, and induced, caused, and materially contributed to DD3’s infringement.

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 27 ⁵³ See, e.g., *Oracle America, Inc. v. Hewlett Packard Enterprise Co.*, 2016 WL 3951653, *5-6
 28 (N.D. Cal. July 22, 2016)

1 173. Disney MPG, either directly or through entities subject to its direction and control
2 such as Mandeville, contracted with DD3 for facial performance capture services and output works
3 using the Contour program for Disney MPG's films *Guardians of the Galaxy* and *Avengers: Age of*
4 *Ultron*.

5 174. Disney MPG, either directly or through entities subject to its direction and control
6 such as Mandeville, initiated and scheduled each facial performance capture session with DD3 using
7 the Contour program.

8 175. Each of the requests for facial performance captures caused DD3 to use the Contour
9 program, which created an infringing copy of the program for non-transitory duration in the RAM of
10 Contour system computers.

11 176. For each session, Disney MPG, either directly or through entities subject to its
12 direction and control such as Mandeville, supplied performers to provide facial performances for
13 capture by DD3 using the Contour program.

14 177. For each session, Disney MPG, either directly or through entities subject to its
15 direction and control such as Mandeville, supplied a director to control and direct the actions of DD3
16 in providing facial performance capture using the Contour system and methods. Acting as Disney
17 MPG's supervising agent, the director controlled and directed DD3's use of the Contour system and
18 methods by starting and terminating each session, starting and stopping each take, ordering DD3 to
19 provide additional takes, and choosing "Selects" (the Contour capture takes which were deemed
20 "good takes" by the director) for further Contour program processing to create Captured Surface and
21 Tracking Mesh output works, all using the Contour system and methods to capture the performer's
22 facial performance. So extensive is Disney MPG's directors' supervision and control over the facial
23 motion capture sessions performed by DD3, that defendants contend that the directors' contribution
24 "is substantial and performs 'the lion's share of the creativity' in the facial motion capture," and that
25 consequently the directors are the authors of the results of the facial motion capture.⁵⁴
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28 ⁵⁴ See, e.g., Dkt. 36 at 8:16-18; 6:13-16.

1 178. For each session, Disney MPG, either directly or through entities subject to its
 2 direction and control, provided various film crew to support and facilitate DD3's facial performance
 3 capture. Disney MPG relied on the presence of a clapperboard operated by defendants' film crew in
 4 images in the original complaint to show that the facial performance sessions were superintended and
 5 directed by persons provided by Disney MPG, either directly or through entities subject to its
 6 direction and control.⁵⁵

7 179. Disney MPG, either directly or through entities subject to its direction and control
 8 such as Mandeville, received from DD3 and reviewed numerous Contour program output works
 9 bearing the Rearden Contour copyright notice.

10 180. After reviewing the Contour program output works from Contour capture takes,
 11 Disney MPG, either directly or through entities subject to its direction and control such as
 12 Mandeville, chose specific Contour works and designated them as "Selects," and caused DD3 to use
 13 the Contour program to further process the Selects to create new output works that were used to
 14 animate CG characters in *Guardians of the Galaxy* and *Avengers: Age of Ultron*, including at least
 15 the Thanos character.

16 181. Each of defendants' requests for further processing of defendants' selected Contour
 17 output works caused DD3 to use the Contour program, which created an infringing copy of the
 18 program for non-transitory duration in the RAM of Contour system computers.^{181.} On
 19 information and belief, the contract between DD3 and Disney MPG, or entities subject to its
 20 direction and control, grants defendants the unrestricted right to cancel "any portion of the Services"
 21 provided by DD3, subject only to the duty to pay for costs and services performed before
 22 cancellation. Accordingly, defendants were in a position to police DD3's infringing acts. They had
 23 the authority and practical ability to observe and evaluate services provided by DD3 and—if
 24 defendants deemed those services inadequate, improper, or unlawful—require DD3 to remedy the
 25 services or cancel DD3's provision of services to defendants but declined to exercise that right.

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 28 ⁵⁵ *Id.* at 8:4-15.

182. At all material times, defendant Disney dominated and controlled defendants Disney MPG and Mandeville, and had a substantial and continuing connection with them with respect to the infringing acts alleged herein.

183. Accordingly, Defendants are contributory infringers of Rearden's copyright in the Contour program, and are liable to Rearden for each of DD3's direct infringements.

184. The acts of vicarious and/or contributory copyright infringement by defendants were, and are, willful, intentional, purposeful and knowing, in that defendants at all material times had actual knowledge that the copyright in the Contour program has been, and is, owned by Rearden, or were in reckless disregard of or willfully blind to Rearden copyrights, and defendants have acted in knowing disregard of and indifference to the Rearden's rights.

185. Rearden has been harmed as the direct and proximate result of the foregoing acts of copyright infringement. Plaintiffs are entitled to actual damages, profits of the infringers, and all such other remedies as may be available under the Copyright Act.

**THIRD CAUSE OF ACTION:
DIRECT AND ACTIVELY-INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,605,861
(DEFENDANT DISNEY MPG)**

186. Plaintiffs reallege and incorporate each and every allegation contained in the paragraphs above with the same force and effect as if they were fully set forth here.

187. Plaintiff Rearden Mova LLC is the owner by assignment of U.S. Patent No. 7,605,861 (the '861 Patent), entitled "Apparatus and Method for Performing Motion Capture Using Shutter Synchronization," issued on October 20, 2009.

188. The '861 Patent generally teaches a system and methods of performing motion capture using shutter synchronization and/or using phosphor-based paint. For example, a method for mixing phosphor-based makeup with a makeup base, applying the mixture on surface regions of a motion capture subject, strobing a light source on and off, and strobing camera shutters synchronously with the strobing light source to perform motion capture.

189. The Contour facial motion capture apparatus and methods, which were conceived and developed by Rearden, and taken, offered and used by DD3, are commercial embodiments of the systems and methods claimed in the '861 Patent.

190. By way of example, and not limitation, claim 1 of the '861 Patent recites the following limitations:

A method comprising:

applying phosphorescent paint to regions of a performer's face and/or body;

strobing a light source on and off, the light source charging the phosphorescent paint when on; and

strobing the shutters of a first plurality of cameras synchronously with the strobing of the light source to capture sequences of images of the phosphorescent paint ("glow frames") as the performer moves or changes facial expressions during a performance, wherein the shutters are open when the light source is off and the shutters are closed when the light source is on.

191. The Contour facial motion capture method includes a step in which phosphor-based paint is applied to regions of a performer's face.

192. The Contour facial motion capture method has white and ultraviolet light sources. The white light source is alternately strobed on and off, charging the phosphor-based paint when on.

193. The Contour facial motion capture technology includes a step in which cameras with shutters controlled by computers and the Contour computer program, which open and close synchronously (strobing). The shutters open when the white light sources are off and the ultraviolet light sources are on, thereby capturing sequences of images of the phosphor-based paint ("glow frames") as the performer changes facial expressions during a performance.

Disney MPG's Direct Infringement under 35 U.S.C. 271(a)

194. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, became a customer of DD3 when it subscribed by contract with DD3 to receive facial performance motion capture services and output works using the Contour system and methods in its *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* films.

1 195. On information and belief, the contract between DD3 and Disney MPG, either
2 directly or through entities subject to Disney MPG's supervision and control, was a "Facility Use and
3 Services Agreement" in which DD3 authorized defendant and its employees, agents, subcontractors,
4 and permittees "to use designated portions of the Playa Facility [DD3's studios] in connection with
5 the Shoot, subject to supervision by any DD3 employees which DD3 may deem appropriate." It
6 requires DD3 to provide designated services at the facility.

7 196. On information and belief, the contract grants Disney MPG, either directly or through
8 entities subject to Disney MPG's supervision and control, the unrestricted right to cancel "any
9 portion of the Services" provided by DD3, subject only to the duty to pay for costs and services
10 performed before cancellation.

11 197. Pursuant to its contract with Disney MPG, either directly or through entities subject to
12 Disney MPG's supervision and control, DD3 provided facial performance motion capture services
13 and output works using the Contour system and methods to Disney MPG on-demand.

14 198. On information and belief, Disney MPG, either directly or through entities subject to
15 Disney MPG's supervision and control, transmitted a request to DD3 to initiate and schedule each
16 facial performance capture session using the Contour system and methods.

17 199. For each Disney MPG-initiated session, Disney MPG, either directly or through
18 entities subject to its supervision and control, supplied performers to provide facial performances for
19 capture by DD3 using the Contour system and methods.

20 200. For each Disney MPG-initiated session, Disney MPG, either directly or through
21 entities subject to its supervision and control, supplied a director to control and direct the actions of
22 DD3 in providing facial performance capture using the Contour system and methods. Acting as
23 Disney MPG's supervising agent, the director controlled and directed DD3's use of the Contour
24 system and methods by starting and terminating each session, starting and stopping each take,
25 ordering DD3 to provide additional takes, and choosing "selects" (the Contour capture takes which
26 were deemed "good takes" by the director) for further Contour program processing to create
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1 Captured Surface and Tracking Mesh output works, all using the Contour system and methods to
2 capture the performer's facial performance.

3 201. After completion of each facial performance capture using the Contour system and
4 methods, Disney MPG, either directly or through entities subject to its supervision and control,
5 caused DD3 to use the Contour system and methods to process the captures into various output
6 works in performance of its facial performance capture contract. DD3 generated Contour output
7 works and made them available to Disney MPG, either directly or to entities subject to Disney
8 MPG's supervision and control, subject to the terms of the facial performance capture contract.

9 202. Disney MPG's on-demand operation of the Contour system and methods is a "use" of
10 the Contour system and methods under 35 U.S.C. § 271(a) because Disney MPG puts the Contour
11 system and methods as a whole into service, *i.e.*, controls the system by initiating and scheduling
12 each session, providing the performer to serve as subject, providing a director to supervise and
13 control DD3's provision of facial performance capture services using the Contour system and
14 methods, choosing "selects" for further Contour program processing, and contracting for output
15 works generated by DD3's operation of the Contour system and methods. But for the actions of
16 Disney MPG or entities subject to its supervision and control, the entire Contour system would never
17 have been put into service in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the*
18 *Beast*.

19 203. Disney MPG obtained benefit from DD3's operation of the Contour system and
20 methods because it received Contour program output works that it used to animate CG characters
21 that appeared in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, and
22 whose appearance was more realistic and compelling than was possible using the output of other
23 performance capture technologies.

24 204. Therefore, Disney MPG directly infringed the '861 patent by using the claimed
25 systems and methods without authorization.

26 ***Disney MPG's Active Inducement of DD3's Direct Infringement Under 35 U.S.C. § 271(b)***

1 205. Defendant Disney MPG, acting either alone or through entities subject to its
2 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
3 system and methods for facial motion capture in *Guardians of the Galaxy* and *Avengers: Age of*
4 *Ultron* without authorization. On information and belief, the contract provided for a financial
5 payment to DD3.

6 206. Defendant Disney MPG, acting either alone or through entities subject to its
7 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
8 system and methods for facial motion capture in *Beauty and the Beast* without authorization. On
9 information and belief, the contract provided for a financial payment to DD3.

10 207. At all material times, defendant Disney MPG had the right and ability to supervise the
11 infringing conduct alleged herein, including but not limited to the infringing acts of defendants
12 Marvel and Mandeville and DD3, and had an obvious and direct financial interest in the exploitation
13 of Rearden Mova's patented works.

14 208. Each instance of DD3's unauthorized use of the Contour facial motion capture system
15 for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and*
16 *the Beast* motion pictures in the performance of its contract with Disney MPG, or with entities
17 subject to Disney MPG's supervision and control, constitutes an act of direct infringement of one or
18 more claims of the '861 Patent.

19 209. At all material times, Disney MPG had actual knowledge of, or was willfully blind to,
20 the '861 Patent because it had performed an intellectual property due diligence with Rearden and
21 worked with Rearden to use the Contour facial motion capture system for facial motion capture in
22 *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and
23 *The Avengers* (2012). Based upon its intellectual property due diligence, Disney MPG had actual
24 knowledge that Rearden regarded the Contour facial motion capture system and methods to be
25 embodiments of the claims of the '861 Patent.

26 210. And on information and belief, Disney MPG had actual knowledge of, or was
27 willfully blind to, the '861 Patent because it had performed an intellectual property due diligence
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1 with DD3 prior to contracting with DD3 to use the Contour facial motion capture system for facial
2 motion capture in *Guardians of the Galaxy* (2014), *Avengers: Age of Ultron* (2015), and *Beauty and*
3 *the Beast* (2017). A competent intellectual property due diligence would have included an
4 examination of the public record of assignments and/or attorney of record of the '861 Patent, which
5 would have revealed that DD3 did not have a license from any entity that could have owned the
6 Contour facial motion capture system.

7 165. And Disney MPG had actual knowledge of, or was willfully blind to, the '861 Patent
8 because Disney had been informed in an email from Pearce that the Contour assets included patents,
9 Disney entered negotiations to acquire the Contour assets, and on information and belief, performed
10 an intellectual property due diligence in connection with the acquisition to know what assets it would
11 be acquiring. Disney pulled out of the acquisition when it learned that LaSalle was unlawfully in
12 possession of them.

13 211. Disney MPG's actual knowledge of the '861 Patent, actual knowledge that Rearden
14 regarded the Contour facial motion capture system and methods to be embodiments of the claims of
15 the '861 Patent, and knowledge of or willful blindness to DD3's lack of authorization from any
16 entity that could have owned the Contour facial motion capture system, confirm Disney MPG's
17 specific intent to induce DD3 to infringe the '861 Patent by contracting with DD3 to use the Contour
18 facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers:*
19 *Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization.

20 212. Consequently, Disney MPG actively induced each instance of DD3's use of the
21 Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*,
22 *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization in the
23 performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision
24 and control. Disney MPG's active inducement of direct infringement by DD3 constitutes acts of
25 infringement of the '861 Patent under 35 U.S.C. § 271(b).

26 213. On information and belief, to the extent that Disney MPG, either directly or through
27 entities subject to its direction and control such as DD3, practiced any methods claimed in the '861
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1 patent outside the United States, Disney MPG, either directly or through entities subject to its
 2 direction and control such as DD3, imported the product of such methods, *i.e.*, Contour output
 3 works, without material change and without combination with any other product, into the United
 4 States constituting direct or actively induced infringement under 35 U.S.C. § 271(g).

5 ***Liability***

6 214. Defendant Disney MPG is liable to Plaintiffs for damages adequate to compensate for
 7 Disney MPG's direct and actively-induced infringements, in an amount to be proved at trial but in no
 8 event less than a reasonable royalty for the use made of Plaintiffs' invention by Disney MPG under
 9 35 U.S.C. § 284.

10 215. In addition, defendant Disney MPG's direct and actively-induced infringements have
 11 caused Plaintiffs irreparable harm that is not compensable by monetary damages, and therefore
 12 Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

13 216. Disney MPG's direct and actively-induced infringements constitute willful, egregious
 14 misconduct, and consequently Plaintiffs are entitled to a discretionary increase of their damages
 15 award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. §
 16 284.

17 217. Finally, based on the foregoing facts, Plaintiffs request that this Court declare this an
 18 exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

19 **FOURTH CAUSE OF ACTION:**
 20 **DIRECT AND ACTIVELY-INDUCED INFRINGEMENT OF U.S. PATENT 7,567,293**
(DEFENDANT DISNEY MPG)

21 218. Plaintiffs reallege and incorporate each and every allegation contained in the
 22 paragraphs above with the same force and effect as if they were fully set forth here.

23 219. Plaintiff Rearden Mova LLC is the owner by assignment of the U.S. Patent 7,567,293
 24 (the '293 Patent), entitled "System and Method for Performing Motion Capture by Strobing a
 25 Fluorescent Lamp," issued on July 28, 2009.

26 220. The '293 Patent teaches systems and methods for performing motion capture using
 27 fluorescent lamps. For example, capturing motion by generating synchronization signals, strobing
 28

1 fluorescent lamps in response to the synchronization signals to charge phosphor-based makeup or
2 dye, and strobing camera shutters synchronously with the lamps or light source.

3 221. The Contour facial motion capture apparatus and methods, which were conceived and
4 developed by Rearden, and taken, offered and used by DD3, are commercial embodiments of the
5 systems and methods claimed in the '293 Patent.

6 222. By way of example, and not limitation, claim 1 of the '293 Patent recites the
7 following limitations:

8 A system comprising:

9 a synchronization signal generator to generate one or more
10 synchronization signals;

11 one or more fluorescent lamps configured to strobe on and off
12 responsive to a first one of the one or more synchronization signals,
the fluorescent lamps illuminating makeup, markers, paint or dye
applied to a subject for a motion capture session; and

13 a first plurality of cameras having shutters strobed synchronously
14 with the strobing of the light source to capture sequences of images
15 of the makeup, markers, paint or dye as the subject moves or
changes facial expressions during a performance, wherein the
shutters are open when the light source is off and the shutters are
closed when the light source is on.

16 223. The Contour facial motion capture system includes a synchronization signal generator
17 to generate synchronization signals.

18 224. The Contour facial motion capture system includes fluorescent lamps configured to
19 strobe on and off responsive to the synchronization signals. The fluorescent lamps illuminate
20 makeup, markers, paint or dye applied to the subject for a motion capture session.

21 225. The Contour facial motion capture system has cameras with shutters that are
22 controlled by the Contour program. The shutters are strobed continuously with the strobing of the
23 fluorescent lamps to capture sequences of images of the makeup, markers, paint or dye as the subject
24 moves or changes facial expressions during a performance.
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226. The Contour computer program signals the cameras to open their shutters when the white fluorescent light source is off and close their shutters when the white fluorescent light source is on.

227. By way of example, and not limitation, claim 3 of the '293 Patent recites the following limitations:

The system as in claim 1 wherein the subject is a performer and wherein makeup, markers, paint or dye is applied in a random pattern to the performer's face.

228. The subjects, e.g., Dan Stevens and Josh Brolin, are performers and makeup was applied in a random pattern to their faces in defendant's use of the Contour system.

229. By way of example, and not limitation, claim 27 of the '293 Patent recites the following limitations:

The system as in claim 1 wherein the makeup or dye includes phosphor.

230. The makeup includes phosphor in defendants' use of the Contour system.

Disney MPG's Direct Infringement under 35 U.S.C. 271(a)

231. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, became a customer of DD3 when it subscribed by contract with DD3 to receive facial performance motion capture services and output works using the Contour system and methods in its *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* films.

232. On information and belief, the contract between DD3 and Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, was a "Facility Use and Services Agreement" in which DD3 authorized defendant and its employees, agents, subcontractors, and permittees "to use designated portions of the Playa Facility [DD3's studios] in connection with the Shoot, subject to supervision by any DD3 employees which DD3 may deem appropriate." It requires DD3 to provide designated services at the facility.

233. On information and belief, the contract grants Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, the unrestricted right to cancel "any

1 portion of the Services” provided by DD3, subject only to the duty to pay for costs and services
2 performed before cancellation.

3 234. Pursuant to its contract with Disney MPG, either directly or through entities subject to
4 Disney MPG’s supervision and control, DD3 provided facial performance motion capture services
5 and output works using the Contour system and methods to Disney MPG on-demand.

6 235. On information and belief, Disney MPG, either directly or through entities subject to
7 Disney MPG’s supervision and control, transmitted a request to DD3 to initiate and schedule each
8 facial performance capture session using the Contour system and methods.

9 236. For each Disney MPG-initiated session, Disney MPG, either directly or through
10 entities subject to its supervision and control, supplied performers to provide facial performances for
11 capture by DD3 using the Contour system and methods.

12 237. For each Disney MPG-initiated session, Disney MPG, either directly or through
13 entities subject to its supervision and control, supplied a director to control and direct the actions of
14 DD3 in providing facial performance capture using the Contour system and methods. Acting as
15 Disney MPG’s supervising agent, the director controlled and directed DD3’s use of the Contour
16 system and methods by starting and terminating each session, starting and stopping each take,
17 ordering DD3 to provide additional takes, and choosing “selects”, all using the Contour system and
18 methods to capture the performer’s facial performance.

19 238. After completion of each facial performance capture using the Contour system and
20 methods, Disney MPG, either directly or through entities subject to its supervision and control,
21 caused DD3 to use the Contour system and methods to process the captures into various output
22 works in performance of its facial performance capture contract. DD3 generated Contour output
23 works and made them available to Disney MPG, either directly or to entities subject to Disney
24 MPG’s supervision and control, subject to the terms of the facial performance capture contract.

25 239. Disney MPG’s on-demand operation of the Contour system and methods is a “use” of
26 the Contour system and methods under 35 U.S.C. § 271(a) because Disney MPG puts the Contour
27 system and methods as a whole into service, *i.e.*, controls the system by initiating and scheduling
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1 each session, providing the performer to serve as subject, providing a director to supervise and
2 control DD3's provision of facial performance capture services using the Contour system and
3 methods, choosing "selects" for further Contour program processing, and contracting for output
4 works generated by DD3's operation of the Contour system and methods. But for the actions of
5 Disney MPG or entities subject to its supervision and control, the entire Contour system would never
6 have been put into service in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the*
7 *Beast*.

8 240. Disney MPG obtained benefit from DD3's operation of the Contour system and
9 methods because it received Contour program output works that it used to animate CG characters
10 that appeared in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, and
11 whose appearance was more realistic and compelling than was possible using the output of other
12 performance capture technologies.

13 241. Therefore, Disney MPG directly infringed the '293 patent by using the claimed
14 systems and methods without authorization.

15 ***Disney MPG's Active Inducement of DD3's Direct Infringement Under 35 U.S.C. § 271(b)***

16 242. At all material times, defendant Disney MPG had the right and ability to supervise the
17 infringing conduct alleged herein, including but not limited to the infringing acts of defendants
18 Marvel and Mandeville, and had an obvious and direct financial interest in the exploitation of
19 Rearden's patented works.

20 243. Defendant Disney MPG, acting either alone or through entities subject to its
21 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
22 system and methods for facial motion capture in *Guardians of the Galaxy* and *Avengers: Age of*
23 *Ultron* without authorization. On information and belief, the contract provided for a financial
24 payment to DD3.

25 244. Defendant Disney MPG, acting either alone or through entities subject to its
26 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
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1 system and methods for facial motion capture in *Beauty and the Beast* without authorization. On
2 information and belief, the contract provided for a financial payment to DD3.

3 245. Each instance of DD3's unauthorized use of the Contour facial motion capture system
4 for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and*
5 *the Beast* motion pictures in the performance of its contract with Disney MPG, or with entities
6 subject to Disney MPG's supervision and control, constitutes an act of direct infringement of one or
7 more claims of the '293 Patent.

8 246. At all material times, Disney MPG had actual knowledge of, or was willfully blind to,
9 the '293 Patent because it had performed an intellectual property due diligence with Rearden and
10 worked with Rearden to use the Contour facial motion capture system for facial motion capture in
11 *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and
12 *The Avengers* (2012). Based upon its intellectual property due diligence, Disney MPG had actual
13 knowledge that Rearden regarded the Contour facial motion capture system and methods to be
14 embodiments of the claims of the '293 Patent.

15 247. And on information and belief, Disney MPG had actual knowledge of, or was
16 willfully blind to, the '293 Patent because it had performed an intellectual property due diligence
17 with DD3 prior to contracting with DD3 to use the Contour facial motion capture system for facial
18 motion capture in *Guardians of the Galaxy* (2014), *Avengers: Age of Ultron* (2015), and *Beauty and*
19 *the Beast* (2017). A competent intellectual property due diligence would have included an
20 examination of the public record of assignments of the '293 Patent, which would have revealed that
21 DD3 did not have authorization from any entity that could have owned the Contour facial motion
22 capture system.

23 186. And Disney MPG had actual knowledge of, or was willfully blind to, the '293 Patent
24 because Disney had been informed in an email from Pearce that the Contour assets included patents,
25 Disney entered negotiations to acquire the Contour assets, and on information and belief, performed
26 an intellectual property due diligence in connection with the acquisition to know what assets it would
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1 be acquiring. Disney pulled out of the acquisition when it learned that LaSalle was unlawfully in
2 possession of the Contour assets.

3 248. Disney MPG's actual knowledge of the '293 Patent, actual knowledge that Rearden
4 regarded the Contour facial motion capture system and methods to be embodiments of the claims of
5 the '293 Patent, and knowledge of or willful blindness to DD3's lack of a license from any entity that
6 could have owned the Contour facial motion capture system, confirm Disney MPG's specific intent
7 to induce DD3 to infringe the '293 Patent by contracting with DD3 to use the Contour facial motion
8 capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*,
9 and *Beauty and the Beast* motion pictures without authorization.

10 249. Consequently, Disney MPG actively induced each instance of DD3's use of the
11 Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*,
12 *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization in the
13 performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision
14 and control. Disney MPG's active inducement of direct infringement by DD3 constitutes acts of
15 infringement of the '293 Patent under 35 U.S.C. § 271(b).

16 250. On information and belief, to the extent that Disney MPG, either directly or through
17 entities subject to its direction and control such as DD3, practiced any methods claimed in the '293
18 patent outside the United States, Disney MPG, either directly or through entities subject to its
19 direction and control such as DD3, imported the product of such methods, *i.e.*, Contour output
20 works, without material change and without combination with any other product, into the United
21 States constituting direct or actively induced infringement under 35 U.S.C. § 271(g).

22 ***Liability***

23 251. Defendant Disney MPG is liable to Plaintiffs for damages adequate to compensate for
24 Disney MPG's direct and actively-induced infringements, in an amount to be proved at trial but in no
25 event less than a reasonable royalty for the use made of Plaintiffs' invention by Disney MPG under
26 35 U.S.C. § 284.

252. In addition, defendant Disney MPG's direct and actively-induced infringements have caused Plaintiffs irreparable harm that is not compensable by monetary damages, and therefore Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

253. Disney MPG's direct and actively-induced infringements constitute willful, egregious misconduct, and consequently Plaintiffs are entitled to a discretionary increase of their damages award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. § 284.

254. Finally, based on the foregoing facts, Plaintiffs request that this Court declare this an exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

**FIFTH CAUSE OF ACTION:
DIRECT AND ACTIVELY-INDUCED INFRINGEMENT OF U.S. PATENT NO. 7,548,272
(DEFENDANT DISNEY MPG)**

255. Plaintiffs reallege and incorporate each and every allegation contained in the paragraphs above with the same force and effect as if they were fully set forth here.

256. Plaintiff Rearden Mova LLC is the owner by assignment of U.S. Patent No. 7,548,272 (the '272 Patent), entitled "System and Method for Performing Motion Capture Using Phosphor Application Techniques," issued on June 16, 2009.

257. The '272 Patent teaches an improved apparatus and method for performing motion capture using phosphor application techniques. For example, a method for mixing phosphor-based makeup with a makeup base, applying the mixture on surface regions of a motion capture subject, strobing light source on and off, and strobing camera shutters synchronously with the strobing light source to perform motion capture.

258. The Contour facial motion capture apparatus and methods, which were conceived and developed by Rearden, and taken, offered and used by DD3, are commercial embodiments of the systems and methods claimed in the '272 Patent.

259. By way of example, and not limitation, claim 1 of the '272 Patent recites the following limitations:

A method for performing motion capture comprising:

1 mixing phosphor with makeup to create a phosphor-makeup
2 mixture;

3 applying the phosphor-makeup mixture to surface regions of a
4 motion capture subject;

5 strobing a light source on and off, the light source charging
6 phosphor within the phosphor-makeup mixture when on; and

7 strobing the shutters of a first plurality of cameras synchronously
8 with the strobing of the light source to capture sequences of images
9 of the phosphor-makeup mixture as the subject moves or changes
10 facial expressions during a performance, wherein the shutters are
11 open when the light source is off and the shutters are closed when
12 the light source is on.

13 260. The Contour facial motion capture method includes a step in which phosphor is mixed
14 with makeup to create a phosphor-makeup mixture.

15 261. The Contour facial motion capture method includes a step in which the phosphor-
16 makeup mixture is applied to surface regions of the motion capture subject.

17 262. The Contour facial motion capture technology includes a step in which a light source
18 is strobed on and off, the light source charging phosphor within the phosphor-makeup mixture when
19 on.

20 263. The Contour facial motion capture technology includes a step in which cameras with
21 shutters are controlled by computers and the Contour program, which opens the shutters when the
22 white light source is off which capture sequences of images of the phosphor-makeup mixture as the
23 subject moves or changes facial expressions during a performance, and the shutters are closed when
24 the white light source is on.

25 264. By way of example, and not limitation, claim 4 of the '272 Patent recites the
26 following limitations:

27 The method as in claim 1 wherein the phosphor-makeup mixture is
28 applied in a random pattern.

265. The phosphor-makeup mixture was applied in a random pattern in defendants' use of
the Contour system.

Disney MPG's Direct Infringement under 35 U.S.C. 271(a)

1 266. Defendant Disney MPG, acting either alone or through entities subject to its
2 supervision and control, became a customer of DD3 when it subscribed by contract with DD3 to
3 receive facial performance motion capture services and output works using the Contour system and
4 methods in its *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* films.

5 267. On information and belief, the contract between DD3 and Disney MPG, either
6 directly or through entities subject to Disney MPG's supervision and control, was a "Facility Use and
7 Services Agreement" in which DD3 authorized defendant and its employees, agents, subcontractors,
8 and permittees "to use designated portions of the Playa Facility [DD3's studios] in connection with
9 the Shoot, subject to supervision by any DD3 employees which DD3 may deem appropriate." It
10 requires DD3 to provide designated services at the facility.

11 268. On information and belief, the contract grants Disney MPG, either directly or through
12 entities subject to Disney MPG's supervision and control, the unrestricted right to cancel "any
13 portion of the Services" provided by DD3, subject only to the duty to pay for costs and services
14 performed before cancellation.

15 269. Pursuant to its contract with Disney MPG, either directly or through entities subject to
16 Disney MPG's supervision and control, DD3 provided facial performance motion capture services
17 and output works using the Contour system and methods to Disney MPG on-demand.

18 270. On information and belief, Disney MPG, either directly or through entities subject to
19 Disney MPG's supervision and control, transmitted a request to DD3 to initiate and schedule each
20 facial performance capture session using the Contour system and methods.

21 271. For each Disney MPG-initiated session, Disney MPG, either directly or through
22 entities subject to its supervision and control, supplied performers to provide facial performances for
23 capture by DD3 using the Contour system and methods.

24 272. For each Disney MPG-initiated session, Disney MPG, either directly or through
25 entities subject to its supervision and control, supplied a director to control and direct the actions of
26 DD3 in providing facial performance capture using the Contour system and methods. Acting as
27 Disney MPG's supervising agent, the director controlled and directed DD3's use of the Contour
28

1 system and methods by starting and terminating each session, starting and stopping each take,
2 ordering DD3 to provide additional takes, and choosing “selects”, all using the Contour system and
3 methods to capture the performer’s facial performance.

4 273. After completion of each facial performance capture using the Contour system and
5 methods, Disney MPG, either directly or through entities subject to its supervision and control,
6 caused DD3 to use the Contour system and methods to process the captures into various output
7 works in performance of its facial performance capture contract. DD3 generated Contour output
8 works and made them available to Disney MPG, either directly or to entities subject to Disney
9 MPG’s supervision and control, subject to the terms of the facial performance capture contract.

10 274. Disney MPG’s on-demand operation of the Contour system and methods is a “use” of
11 the Contour system and methods under 35 U.S.C. § 271(a) because Disney MPG puts the Contour
12 system and methods as a whole into service, *i.e.*, controls the system by initiating and scheduling
13 each session, providing the performer to serve as subject, providing a director to supervise and
14 control DD3’s provision of facial performance capture services using the Contour system and
15 methods, choosing “selects” for further Contour program processing, and contracting for output
16 works generated by DD3’s operation of the Contour system and methods. But for the actions of
17 Disney MPG or entities subject to its supervision and control, the entire Contour system would never
18 have been put into service in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the*
19 *Beast*.

20 275. Disney MPG obtained benefit from DD3’s operation of the Contour system and
21 methods because it received Contour program output works that it used to animate CG characters
22 that appeared in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, and
23 whose appearance was more realistic and compelling than was possible using the output of other
24 performance capture technologies.

25 276. Therefore, Disney MPG directly infringed the ‘272 patent by using the claimed
26 systems and methods without authorization.

Disney MPG's Active Inducement of DD3's Direct Infringement Under 35 U.S.C. § 271(b)

277. At all material times, defendant Disney MPG had the right and ability to supervise the infringing conduct alleged herein, including but not limited to the infringing acts of defendants Marvel and Mandeville, and had an obvious and direct financial interest in the exploitation of Rearden's patented works.

278. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, contracted with DD3 to use the patented Contour facial motion capture system and methods for facial motion capture in *Guardians of the Galaxy* and *Avengers: Age of Ultron* without authorization. On information and belief, the contract provided for a financial payment to DD3.

279. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, contracted with DD3 to use the patented Contour facial motion capture system and methods for facial motion capture in *Beauty and the Beast* without authorization. On information and belief, the contract provided for a financial payment to DD3.

280. Each instance of DD3's unauthorized use of the Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures in the performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision and control, constitutes an act of direct infringement of one or more claims of the '272 Patent.

281. At all material times, Disney MPG had actual knowledge of, or was willfully blind to, the '272 Patent because it had performed an intellectual property due diligence with Rearden and worked with Rearden to use the Contour facial motion capture system for facial motion capture in *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and *The Avengers* (2012). Based upon its intellectual property due diligence, Disney MPG had actual knowledge that Rearden regarded the Contour facial motion capture system and methods to be embodiments of the claims of the '272 Patent.

1 282. And on information and belief, Disney MPG had actual knowledge of, or was
2 willfully blind to, the '272 Patent because it had performed an intellectual property due diligence
3 with DD3 prior to contracting with DD3 to use the Contour facial motion capture system for facial
4 motion capture in *Guardians of the Galaxy* (2014), *Avengers: Age of Ultron* (2015), and *Beauty and*
5 *the Beast* (2017). A competent intellectual property due diligence would have included an
6 examination of the public record of assignments of the '272 Patent, which would have revealed that
7 DD3 did not have a license from any entity that could have owned the Contour facial motion capture
8 system.

9 283. And Disney MPG had actual knowledge of, or was willfully blind to, the '272 Patent
10 because Disney had been informed in an email from Pearce that the Contour assets included patents,
11 Disney entered negotiations to acquire the Contour assets, and on information and belief, performed
12 an intellectual property due diligence in connection with the acquisition to know what assets it would
13 be acquiring. Disney pulled out of the acquisition when it learned that LaSalle was unlawfully in
14 possession of them.

15 284. Disney MPG's actual knowledge of the '272 Patent, actual knowledge that Rearden
16 regarded the Contour facial motion capture system and methods to be embodiments of the claims of
17 the '272 Patent, and knowledge of or willful blindness to DD3's lack of authorization from any
18 entity that could have owned the Contour facial motion capture system, confirm Disney MPG's
19 specific intent to induce DD3 to infringe the '272 Patent by contracting with DD3 to use the Contour
20 facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers:*
21 *Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization.

22 285. Consequently, Disney MPG actively induced each instance of DD3's use of the
23 Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*,
24 *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization in the
25 performance of its contract with Disney MPG. Disney MPG's active inducement of direct
26 infringement by DD3 constitutes acts of infringement of the '272 Patent under 35 U.S.C. § 271(b).

286. On information and belief, to the extent that Disney MPG, either directly or through entities subject to its direction and control such as DD3, practiced any methods claimed in the '272 patent outside the United States, Disney MPG, either directly or through entities subject to its direction and control such as DD3, imported the product of such methods, *i.e.*, Contour output works, without material change and without combination with any other product, into the United States constituting direct or actively induced infringement under 35 U.S.C. § 271(g).

Liability

287. Defendant Disney MPG is liable to Plaintiffs for damages adequate to compensate for Disney MPG's direct and actively-induced infringements, in an amount to be proved at trial but in no event less than a reasonable royalty for the use made of Plaintiffs' invention by Disney MPG under 35 U.S.C. § 284.

288. In addition, defendant Disney MPG's direct and actively-induced infringements have caused Plaintiffs irreparable harm that is not compensable by monetary damages, and Plaintiffs therefore are entitled to injunctive relief under 35 U.S.C. § 283.

289. Disney MPG's direct and actively-induced infringements constitutes willful, egregious misconduct, and consequently Plaintiffs are entitled to a discretionary increase of their damages award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. § 284.

290. Finally, based on the foregoing facts, Plaintiffs request that this Court declare this an exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

**SIXTH CAUSE OF ACTION:
DIRECT AND ACTIVELY-INDUCED INFRINGEMENT OF U.S. PATENT NO. 8,659,668
(DEFENDANT DISNEY MPG)**

291. Plaintiffs reallege and incorporate each and every allegation contained in the paragraphs above with the same force and effect as if they were fully set forth here.

292. Plaintiff Rearden Mova LLC is the owner by assignment of U.S. Patent No. 8,659,668 (the '668 Patent), entitled "Apparatus and Method for Performing Motion Capture Using a Random Pattern on Capture Surfaces," issued on February 25, 2014.

1 293. The '668 Patent claims methods for applying a random pattern to specified regions of
2 an object, tracking the movement of the random pattern, and generating motion data representing the
3 movement of the object.

4 294. The Contour facial motion capture apparatus and methods, which were conceived and
5 developed by Rearden, and taken, offered and used by DD3, are commercial embodiments of the
6 systems and methods claimed in the '668 Patent.

7 295. By way of example, and not limitation, claim 1 of the '668 Patent recites the
8 following limitations:

9 A method comprising:

10 applying a random pattern of material to specified regions of a
11 performer's face, body and/or clothing;

12 capturing sequences of images of the random pattern with a first
13 plurality of cameras as the performer moves and/or changes facial
expressions during a motion capture session;

14 correlating the random pattern across two or more images captured
15 from two or more different cameras to create a 3-dimensional surface
of the specified regions of the performer's face, body, and/or clothing;

16 generating motion data representing the movement of the 3-
dimensional surface across the sequence of images;

17 strobing a light source on and off, the light source charging the random
18 pattern when on; and

19 strobing the shutters of a first plurality of cameras synchronously with
20 the strobing of the light source to capture the sequences of images of
the random pattern ("glow frames") as the performer moves or changes
21 facial expressions during a performance, wherein the shutters of the
first plurality of cameras are open when the light source is off and the
shutters are closed when the light source is on.

22 296. The Contour facial motion capture method includes a step of applying a random
23 pattern of material, a phosphor-makeup mixture, to regions of a performer's face.

24 297. The Contour facial motion capture method includes a step of capturing sequences of
25 images of the random patterns with cameras as the subject moves and changes facial expressions.
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1 298. The Contour facial motion capture method includes a step of processing by a
2 computer programmed with the Contour computer program, to correlate the random pattern across
3 images captured by cameras to create a 3-dimensional surface of the performer's face.

4 299. The Contour facial motion capture method includes a step of processing by a
5 computer programmed with the Contour program to generate motion data representing movement of
6 the three dimensional surface across the sequence of images.

7 300. The Contour facial motion capture method includes a step of strobing white
8 fluorescent light sources on and off, where the white light sources charge the random pattern of
9 phosphor in the phosphor-makeup mixture.

10 301. The Contour facial motion capture method includes a step of strobing the shutters of
11 cameras controlled by the Contour computer program. The shutters are strobed synchronously with
12 the strobing of the light source to capture sequences of images of the random pattern of phosphor in
13 the phosphor-makeup mixture as the performer moves or changes facial expressions during a
14 performance. The shutters are open when the white light source is off, and closed when the light
15 source is on.

16 302. By way of example, and not limitation, claim 28 of the '668 Patent recites the
17 following limitations:

18 The method as in claim 1 wherein applying the random pattern
19 comprises:

20 spraying the random pattern of material on the performer's face,
21 body, and/or clothing with an airbrush.

22 303. Applying the random pattern comprises spraying the random pattern of material on
23 the performer's face, body, and/or clothing with an airbrush in defendants' use of the Contour
24 system.

Disney MPG's Direct Infringement under 35 U.S.C. 271(a)

304. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, became a customer of DD3 when it subscribed by contract with DD3 to receive facial performance motion capture services and output works using the Contour system and methods in its *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* films.

305. On information and belief, the contract between DD3 and Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, was a "Facility Use and Services Agreement" in which DD3 authorized defendant and its employees, agents, subcontractors, and permittees "to use designated portions of the Playa Facility [DD3's studios] in connection with the Shoot, subject to supervision by any DD3 employees which DD3 may deem appropriate." It requires DD3 to provide designated services at the facility.

306. On information and belief, the contract grants Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, the unrestricted right to cancel "any portion of the Services" provided by DD3, subject only to the duty to pay for costs and services performed before cancellation.

307. Pursuant to its contract with Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, DD3 provided facial performance motion capture services and output works using the Contour system and methods to Disney MPG on-demand.

308. On information and belief, Disney MPG, either directly or through entities subject to Disney MPG's supervision and control, transmitted a request to DD3 to initiate and schedule each facial performance capture session using the Contour system and methods.

309. For each Disney MPG-initiated session, Disney MPG, either directly or through entities subject to its supervision and control, supplied performers to provide facial performances for capture by DD3 using the Contour system and methods.

310. For each Disney MPG-initiated session, Disney MPG, either directly or through entities subject to its supervision and control, supplied a director to control and direct the actions of DD3 in providing facial performance capture using the Contour system and methods. Acting as

1 Disney MPG's supervising agent, the director controlled and directed DD3's use of the Contour
2 system and methods by starting and terminating each session, starting and stopping each take,
3 ordering DD3 to provide additional takes, and choosing "selects", all using the Contour system and
4 methods to capture the performer's facial performance.

5 311. After completion of each facial performance capture using the Contour system and
6 methods, Disney MPG, either directly or through entities subject to its supervision and control,
7 caused DD3 to use the Contour system and methods to process the captures into various output
8 works in performance of its facial performance capture contract. DD3 generated Contour output
9 works and made them available to Disney MPG, either directly or to entities subject to Disney
10 MPG's supervision and control, subject to the terms of the facial performance capture contract.

11 312. Disney MPG's on-demand operation of the Contour system and methods is a "use" of
12 the Contour system and methods under 35 U.S.C. § 271(a) because Disney MPG puts the Contour
13 system and methods as a whole into service, *i.e.*, controls the system by initiating and scheduling
14 each session, providing the performer to serve as subject, providing a director to supervise and
15 control DD3's provision of facial performance capture services using the Contour system and
16 methods, choosing "selects" for further Contour program processing, and contracting for output
17 works generated by DD3's operation of the Contour system and methods. But for the actions of
18 Disney MPG or entities subject to its supervision and control, the entire Contour system would never
19 have been put into service in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the*
20 *Beast*.

21 313. Disney MPG obtained benefit from DD3's operation of the Contour system and
22 methods because it received Contour program output works that it used to animate CG characters
23 that appeared in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, and
24 whose appearance was more realistic and compelling than was possible using the output of other
25 performance capture technologies.

26 314. Therefore, Disney MPG directly infringed the '668 patent by using the claimed
27 systems and methods without authorization.
28

Disney MPG's Active Inducement of DD3's Direct Infringement Under 35 U.S.C. § 271(b)

315. At all material times, defendant Disney MPG had the right and ability to supervise the infringing conduct alleged herein, including but not limited to the infringing acts of defendants Marvel and Mandeville, and had an obvious and direct financial interest in the exploitation of Rearden's patented works.

316. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, contracted with DD3 to use the patented Contour facial motion capture system and methods for facial motion capture in *Guardians of the Galaxy* and *Avengers: Age of Ultron* without authorization. On information and belief, the contract provided for a financial payment to DD3.

317. Defendant Disney MPG, acting either alone or through entities subject to its supervision and control, contracted with DD3 to use the patented Contour facial motion capture system and methods for facial motion capture in *Beauty and the Beast* without authorization. On information and belief, the contract provided for a financial payment to DD3.

318. Each instance of DD3's unauthorized use of the Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures in the performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision and control, constitutes an act of direct infringement of one or more claims of the '668 Patent.

319. At all material times, Disney MPG had actual knowledge of, or was willfully blind to, the '668 Patent because it had performed an intellectual property due diligence with Rearden and worked with Rearden to use the Contour facial motion capture system for facial motion capture in *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and *The Avengers* (2012). Based upon its intellectual property due diligence, Disney MPG had actual knowledge that Rearden regarded the Contour facial motion capture system and methods to be embodiments of the claims of the '668 Patent.

1 320. And on information and belief, Disney MPG had actual knowledge of, or was
2 willfully blind to, the '668 Patent because it had performed an intellectual property due diligence
3 with DD3 prior to contracting with DD3 to use the Contour facial motion capture system for facial
4 motion capture in *Guardians of the Galaxy* (2014), *Avengers: Age of Ultron* (2015), and *Beauty and*
5 *the Beast* (2017). A competent intellectual property due diligence would have included an
6 examination of the public record of assignments of the '668 Patent, which would have revealed that
7 DD3 did not have a license from any entity that could have owned the Contour facial motion capture
8 system.

9 321. And Disney MPG had actual knowledge of, or was willfully blind to, the '668 Patent
10 because Disney had been informed in an email from Pearce that the Contour assets included patents,
11 Disney entered negotiations to acquire the Contour assets, and on information and belief, performed
12 an intellectual property due diligence in connection with the acquisition, to know what assets it
13 would be acquiring. Disney pulled out of the acquisition when it learned that LaSalle was
14 unlawfully in possession of them.

15 322. Disney MPG's actual knowledge of the '668 Patent, actual knowledge that Rearden
16 regarded the Contour facial motion capture system and methods to be embodiments of the claims of
17 the '668 Patent, and knowledge of or willful blindness to DD3's lack of authorization from any
18 entity that could have owned the Contour facial motion capture system, confirm Disney MPG's
19 specific intent to induce DD3 to infringe the '668 Patent by contracting with DD3 to use the Contour
20 facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers:*
21 *Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization.

22 323. Consequently, Disney MPG actively induced each instance of DD3's use of the
23 Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*,
24 *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization in the
25 performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision
26 and control. Disney MPG's active inducement of direct infringement by DD3 constitutes acts of
27 infringement of the '668 Patent under 35 U.S.C. § 271(b).
28

324. On information and belief, to the extent that Disney MPG, either directly or through entities subject to its direction and control such as DD3, practiced any methods claimed in the '668 patent outside the United States, Disney MPG, either directly or through entities subject to its direction and control such as DD3, imported the product of such methods, *i.e.*, Contour output works, without material change and without combination with any other product, into the United States constituting direct or actively induced infringement under 35 U.S.C. § 271(g).

Liability

325. Defendant Disney MPG is liable to Plaintiffs for damages adequate to compensate for Disney MPG's direct and actively-induced infringements, in an amount to be proved at trial but in no event less than a reasonable royalty for the use made of Plaintiffs' invention by Disney MPG under 35 U.S.C. § 284.

326. In addition, defendant Disney MPG's direct and actively-induced infringements have caused Plaintiffs irreparable harm that is not compensable by monetary damages, and therefore Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

327. Disney MPG's direct and actively-induced infringements constitute willful, egregious misconduct, and consequently Plaintiffs are entitled to a discretionary increase of their damages award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C. § 284.

328. Finally, based on the foregoing facts, Plaintiffs request that this Court declare this an exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

**SEVENTH CAUSE OF ACTION:
DIRECT AND ACTIVELY-INDUCED INFRINGEMENT OF U.S. PATENT NO. 8,207,963
(DEFENDANT DISNEY MPG)**

329. Plaintiffs reallege and incorporate each and every allegation contained in the paragraphs above with the same force and effect as if they were fully set forth here.

330. Plaintiff Rearden Mova LLC is the owner by assignment of U.S. Patent No. 8,207,963 (the '963 Patent), entitled "System and Method for Performance Motion Capture and Image Reconstruction," issued on June 26, 2012.

331. The '963 Patent claims methods for establishing a reference frame and tracking many vertices from frame to frame through the captured sequence.

332. The Contour facial motion capture apparatus and methods, which were conceived and developed by Rearden, and taken, offered and used by DD3, are commercial embodiments of the systems and methods claimed in the '963 Patent.

333. By way of example, and not limitation, claim 1 of the '963 Patent recites the following limitations:

1. A computer-implemented system for performing motion capture of a subject comprising:

a plurality of cameras for capturing a sequence of image frames of the subject over a period of time, each frame having a plurality of vertices defining a captured surface of the subject;

a computing system for processing the sequence of image frames, the computing system having a memory for storing program code and a processor for processing the program code to perform the operations of:

establishing a reference frame having one or more of the plurality of vertices and specifying a location for each of the vertices;

performing frame-to-frame tracking to identify locations of vertices within an N'th frame based on locations of vertices within an (N-1)'th frame or an earlier frame;

performing reference-to-frame tracking to identify locations of vertices within the N'th frame based on the locations of vertices in the reference frame to counter potential drift between the frames;

storing the locations of vertices for use in subsequent reconstruction of the motion of the subject; and performing the frame-to-frame and reference-to-frame tracking again using a different set of parameters, the parameters defining a search area for the vertices of each frame wherein multiple correlation passes are performed with the different sets of parameters;

and wherein for passes after the first, the search area is shrunk by using an estimate of the position of a vertex based on the position of nearby vertices that were successfully tracked in the previous passes.

334. The Contour facial motion capture method includes a step of using a plurality of cameras for capturing a sequence of image frames of the subject over a period of time, each frame having a plurality of vertices defining a captured surface of the subject.

1 335. The Contour facial motion capture method includes a step of using a computing
2 system for processing the sequence of image frames, the computing system having a memory for
3 storing program code and a processor for processing the program code to perform the operations of:

- 4 (a) establishing a reference frame having one or more of the plurality of vertices
5 and specifying a location for each of the vertices;
- 6 (b) performing frame-to-frame tracking to identify locations of vertices within an
7 N'th frame based on locations of vertices within an (N-1)'th frame or an
8 earlier frame;
- 9 (c) performing reference-to-frame tracking to identify locations of vertices within
10 the N'th frame based on the locations of vertices in the reference frame to
11 counter potential drift between the frames;
- 12 (d) storing the locations of vertices for use in subsequent reconstruction of the
13 motion of the subject; and performing the frame-to-frame and reference-to-
14 frame tracking again using a different set of parameters, the parameters
15 defining a search area for the vertices of each frame wherein multiple
16 correlation passes are performed with the different sets of parameters; and
- 17 (e) wherein the search area is shrunk by using an estimate of the position of a
18 vertex based on the position of nearby vertices that were successfully tracked
19 in the previous passes.

20 336. By way of example, and not limitation, claim 11 of the '963 Patent recites the
21 following limitations:

22 The system as in claim 1 wherein the subject is a performer and
23 wherein a random pattern of material is applied to regions of the
24 performer's face to create the vertices to be tracked.

25 337. The subject is a performer and a random pattern of material is applied to regions of
26 the performer's face to create the vertices to be tracked in defendants' use of the Contour system.

27 338. By way of example, and not limitation, claim 23 of the '963 Patent recites the
28 following limitations:

 The system as in claim 11 wherein applying the random pattern
comprises:

spraying the random pattern on the performer's face with an
airbrush.

1 339. Applying the random pattern comprises spraying the random pattern on the
2 performer's face with an airbrush in defendants' use of the Contour system.

3 ***Disney MPG's Direct Infringement under 35 U.S.C. 271(a)***

4 340. Defendant Disney MPG, acting either alone or through entities subject to its
5 supervision and control, became a customer of DD3 when it subscribed by contract with DD3 to
6 receive facial performance motion capture services and output works using the Contour system and
7 methods in its *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* films.

8 341. On information and belief, the contract between DD3 and Disney MPG, either
9 directly or through entities subject to Disney MPG's supervision and control, was a "Facility Use and
10 Services Agreement" in which DD3 authorized defendant and its employees, agents, subcontractors,
11 and permittees "to use designated portions of the Playa Facility [DD3's studios] in connection with
12 the Shoot, subject to supervision by any DD3 employees which DD3 may deem appropriate." It
13 requires DD3 to provide designated services at the facility.

14 342. On information and belief, the contract grants Disney MPG, either directly or through
15 entities subject to Disney MPG's supervision and control, the unrestricted right to cancel "any
16 portion of the Services" provided by DD3, subject only to the duty to pay for costs and services
17 performed before cancellation.

18 343. Pursuant to its contract with Disney MPG, either directly or through entities subject to
19 Disney MPG's supervision and control, DD3 provided facial performance motion capture services
20 and output works using the Contour system and methods to Disney MPG on-demand.

21 344. On information and belief, Disney MPG, either directly or through entities subject to
22 Disney MPG's supervision and control, transmitted a request to DD3 to initiate and schedule each
23 facial performance capture session using the Contour system and methods.

24 345. For each Disney MPG-initiated session, Disney MPG, either directly or through
25 entities subject to its supervision and control, supplied performers to provide facial performances for
26 capture by DD3 using the Contour system and methods.

1 346. For each Disney MPG-initiated session, Disney MPG, either directly or through
2 entities subject to its supervision and control, supplied a director to control and direct the actions of
3 DD3 in providing facial performance capture using the Contour system and methods. Acting as
4 Disney MPG's supervising agent, the director controlled and directed DD3's use of the Contour
5 system and methods by starting and terminating each session, starting and stopping each take,
6 ordering DD3 to provide additional takes, and choosing "selects", all using the Contour system and
7 methods to capture the performer's facial performance.

8 347. After completion of each facial performance capture using the Contour system and
9 methods, Disney MPG, either directly or through entities subject to its supervision and control,
10 caused DD3 to use the Contour system and methods to process the captures into various output
11 works in performance of its facial performance capture contract. DD3 generated Contour output
12 works and made them available to Disney MPG, either directly or to entities subject to Disney
13 MPG's supervision and control, subject to the terms of the facial performance capture contract.

14 348. Disney MPG's on-demand operation of the Contour system and methods is a "use" of
15 the Contour system and methods under 35 U.S.C. § 271(a) because Disney MPG puts the Contour
16 system and methods as a whole into service, *i.e.*, controls the system by initiating and scheduling
17 each session, providing the performer to serve as subject, providing a director to supervise and
18 control DD3's provision of facial performance capture services using the Contour system and
19 methods, and contracting for output works generated by DD3's operation of the Contour system and
20 methods. But for the actions of Disney MPG or entities subject to its supervision and control, the
21 entire Contour system would never have been put into service in *Guardians of the Galaxy*, *Avengers:*
22 *Age of Ultron*, and *Beauty and the Beast*.

23 349. Disney MPG obtained benefit from DD3's operation of the Contour system and
24 methods because it received Contour program output works that it used to animate CG characters
25 that appeared in *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast*, and
26 whose appearance was more realistic and compelling than was possible using the output of other
27 performance capture technologies.
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1 350. Therefore, Disney MPG directly infringed the '963 patent by using the claimed
2 systems and methods without authorization.

3 ***Disney MPG's Active Inducement of DD3's Direct Infringement Under 35 U.S.C. § 271(b)***

4 351. At all material times, defendant Disney MPG had the right and ability to supervise the
5 infringing conduct alleged herein, including but not limited to the infringing acts of defendants
6 Marvel and Mandeville, and had an obvious and direct financial interest in the exploitation of
7 Rearden's patented works.

8 352. Defendant Disney MPG, acting either alone or through entities subject to its
9 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
10 system and methods for facial motion capture in *Guardians of the Galaxy* and *Avengers: Age of*
11 *Ultron* without authorization. On information and belief, the contract provided for a financial
12 payment to DD3.

13 353. Defendant Disney MPG, acting either alone or through entities subject to its
14 supervision and control, contracted with DD3 to use the patented Contour facial motion capture
15 system and methods for facial motion capture in *Beauty and the Beast* without authorization. On
16 information and belief, the contract provided for a financial payment to DD3.

17 354. Each instance of DD3's unauthorized use of the Contour facial motion capture system
18 for facial motion capture in the *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and*
19 *the Beast* motion pictures in the performance of its contract with Disney MPG, or with entities
20 subject to Disney MPG's supervision and control, constitutes an act of direct infringement of one or
21 more claims of the '963 Patent.

22 355. At all material times, Disney MPG had actual knowledge of, or was willfully blind to,
23 the '963 Patent because it had performed an intellectual property due diligence with Rearden and
24 worked with Rearden to use the Contour facial motion capture system for facial motion capture in
25 *TRON: Legacy* (2010), *Pirates of the Caribbean: On Stranger Tides* (2011), *John Carter* (2012), and
26 *The Avengers* (2012). Based upon its intellectual property due diligence, Disney MPG had actual
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28

1 knowledge that Rearden regarded the Contour facial motion capture system and methods to be
2 embodiments of the claims of the '963 Patent.

3 356. And on information and belief, Disney MPG had actual knowledge of, or was
4 willfully blind to, the '963 Patent because it had performed an intellectual property due diligence
5 with DD3 prior to contracting with DD3 to use the Contour facial motion capture system for facial
6 motion capture in *Guardians of the Galaxy* (2014), *Avengers: Age of Ultron* (2015), and *Beauty and*
7 *the Beast* (2017). A competent intellectual property due diligence would have included an
8 examination of the public record of assignments of the '963 Patent, which would have revealed that
9 DD3 did not have a license from any entity that could have owned the Contour facial motion capture
10 system.

11 249. And Disney MPG had actual knowledge of, or was willfully blind to, the '963 Patent
12 because Disney had been informed in an email from Pearce that the Contour assets included patents,
13 Disney entered negotiations to acquire the Contour assets, and on information and belief, performed
14 an intellectual property due diligence in connection with the acquisition, to know what assets it
15 would be acquiring. Disney pulled out of the acquisition when it learned that LaSalle was
16 unlawfully in possession of them.

17 357. Disney MPG's actual knowledge of the '963 Patent, actual knowledge that Rearden
18 regarded the Contour facial motion capture system and methods to be embodiments of the claims of
19 the '963 Patent, and knowledge of or willful blindness to DD3's lack of authorization from any
20 entity that could have owned the Contour facial motion capture system, confirm Disney MPG's
21 specific intent to induce DD3 to infringe the '963 Patent by contracting with DD3 to use the Contour
22 facial motion capture system for facial motion capture in the *Guardians of the Galaxy*, *Avengers:*
23 *Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization.

24 358. Consequently, Disney MPG actively induced each instance of DD3's use of the
25 Contour facial motion capture system for facial motion capture in the *Guardians of the Galaxy*,
26 *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures without authorization in the
27 performance of its contract with Disney MPG, or with entities subject to Disney MPG's supervision
28

1 and control. Disney MPG's active inducement of direct infringement by DD3 constitutes acts of
2 infringement of the '963 Patent under 35 U.S.C. § 271(b).

3 359. On information and belief, to the extent that Disney MPG, either directly or through
4 entities subject to its direction and control such as DD3, practiced any methods claimed in the '963
5 patent outside the United States, Disney MPG, either directly or through entities subject to its
6 direction and control such as DD3, imported the product of such methods, *i.e.*, Contour output
7 works, without material change and without combination with any other product, into the United
8 States constituting direct or actively induced infringement under 35 U.S.C. § 271(g).

9 ***Liability***

10 360. Defendant Disney MPG is liable to Plaintiffs for damages adequate to compensate for
11 Disney MPG's direct and actively-induced infringements, in an amount to be proved at trial but in no
12 event less than a reasonable royalty for the use made of Plaintiffs' invention by Disney MPG under
13 35 U.S.C. § 284.

14 361. In addition, defendant Disney MPG's direct and actively-induced infringements have
15 caused Plaintiffs irreparable harm that is not compensable by monetary damages, and therefore
16 Plaintiffs are entitled to injunctive relief under 35 U.S.C. § 283.

17 362. Disney MPG's direct and actively-induced infringements constitute willful, egregious
18 misconduct, and consequently Plaintiffs are entitled to a discretionary increase of their damages
19 award up to three times the amount found or assessed, costs, and attorney's fees under 35 U.S.C.
20 § 284.

21 363. Finally, based on the foregoing facts, Plaintiffs request that this Court declare this an
22 exceptional case, and award Plaintiffs their costs and attorney's fees under 35 U.S.C. § 285.

23 **EIGHTH CAUSE OF ACTION:**
24 **TRADEMARK INFRINGEMENT**
(DEFENDANTS DISNEY COMPANY, DISNEY MPG, AND BUENA VISTA)

25 364. Plaintiffs reallege and incorporate each and every allegation contained in the
26 paragraphs above with the same force and effect as if they were fully set forth here.

365. At all material times, plaintiff Rearden Mova was the owner of U.S. Registration No. 3,843,152 for the MOVA trademark.

366. MOVA is an arbitrary or at least fanciful mark that is inherently distinctive.

367. Since at least 2006, Rearden Mova and its predecessors in interest have used the MOVA trademark in connection with the marketing, promotion, and sales of Contour facial performance capture services and output works to the motion picture and videogame industry, including major motion picture studios and VFX studios.

368. Through the marketing, promotion, and sales efforts of Rearden Mova and its predecessors in interest from 2005 through the present, and through the widespread publicity of and industry acclaim for the Contour facial performance capture technology and services offered by Rearden, Rearden Mova's MOVA trademark has acquired secondary meaning indicating that Rearden is the exclusive source of Contour facial performance capture technology and services.

369. At all material times, defendant Disney Company dominated and controlled defendants Disney MPG and Buena Vista.

370. Without authorization, Disney MPG and Buena Vista used Rearden Mova's MOVA trademark in commerce in the credits on their *Guardians of the Galaxy* film, stating that "Facial motion capture services were provided by Mova, a division of Digital Domain," as shown below:



1 371. And in connection with commercial advertising and promotion of its *Beauty and the*
2 *Beast* film including press releases, press conferences, and other advertising and promotional
3 activities,” Disney MPG through its employees, contractors, and agents, used Rearden’s MOVA
4 service mark, including but not limited to a press conference where Dan Stevens, the actor portraying
5 Beast, states that the facial capture “was done separately using a technology called MOVA.”

6 372. Disney MPG and Buena Vista’s unauthorized use of Rearden Mova’s MOVA
7 trademark on the credits for their *Guardians of the Galaxy* film and in connection with commercial
8 advertising and promotion of its *Beauty and the Beast* film is a use of a word or term that is likely to
9 cause confusion, mistake or deception as to the affiliation, connection, or association of Disney with
10 Rearden, and/or as to the origin, sponsorship of approval of the facial motion capture services used in
11 the *Guardians of the Galaxy* and *Beauty and the Beast* films by Rearden because the MOVA
12 trademark is exclusively associated with Rearden and identifies the exclusive source of its Contour
13 facial motion capture services and output works.

14 373. Disney MPG and Buena Vista’s unauthorized use of Rearden Mova’s MOVA
15 trademark on the credits for their *Guardians of the Galaxy* film and in connection with commercial
16 advertising and promotion of its *Beauty and the Beast* film is a misleading description or
17 representation of fact that is likely to cause confusion, mistake or deception as to the affiliation,
18 connection, or association of Disney with Rearden, and/or as to the origin, sponsorship of approval
19 of the facial motion capture services used in the *Guardians of the Galaxy* and *Beauty and the Beast*
20 films by Rearden because the MOVA trademark is exclusively associated with Rearden and
21 identifies the exclusive source of its Contour facial motion capture services and output works.

22 374. Unauthorized use of Rearden Mova’s MOVA trademark by Disney MPG, acting
23 either directly or through entities subject to its supervision and control, including but not limited to
24 defendants Marvel and Mandeville, in commerce in connection with commercial advertising and
25 promotion of its *Guardians of the Galaxy* and *Beauty and the Beast* films, including press releases,
26 press conferences, and other advertising and promotional activities, constitutes a use of a word or
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28

1 term and a misleading description or representation of fact that is likely to cause confusion, mistake
2 or deception as to the characteristics and qualities of the facial motion capture services in the films
3 because the MOVA trademark is exclusively associated with Rearden and identifies the exclusive
4 source of its Contour facial motion capture services and output works.

5 375. Rearden Mova is, and is likely to continue to be, damaged by Disney MPG and Buena
6 Vista's unauthorized use of its Rearden MOVA service mark.

7 376. Disney MPG and Buena Vista's unauthorized use of Rearden Mova's MOVA
8 trademark in commerce was with actual knowledge or willful disregard of Rearden Mova's service
9 mark, with intent to cause confusion, mistake or deception.

10 269. At all material times, defendant Disney dominated and controlled Disney MPG and
11 Buena Vista.

12 377. Defendants Disney Company, Disney MPG, and Buena Vista are liable to Plaintiffs
13 for each and every act of trademark infringement alleged herein.

14 378. Plaintiffs are entitled to an award of their actual damages, disgorgement of
15 defendants' profits, and costs and attorney's fees.

16 379. Furthermore, Plaintiffs have suffered irreparable harm that is not compensable by
17 monetary damages, and is therefore entitled to injunctive and other equitable relief.

18 **PRAYER FOR RELIEF**

19 Wherefore, Plaintiffs request the following relief:

20 A. Enter preliminary and/or permanent injunctions pursuant to 15 U.S.C. § 1116
21 prohibiting defendants from using any of Plaintiffs' trademarks, and prohibiting distribution of the
22 *Guardians of the Galaxy* motion picture in any medium bearing any of Plaintiffs' trademarks without
23 authorization of Plaintiffs.

24 B. Pursuant to 15 U.S.C. § 1118, order the impoundment and destruction of all copies of
25 *Guardians of the Galaxy*, *Avengers: Age of Ultron*, and *Beauty and the Beast* motion pictures in any
26 medium.

27 C. Award financial damages compensation as follows:
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1 1. Pursuant to 17 U.S.C. § 504, award Plaintiffs (a) actual damages; and (b) any
2 additional profits of defendants that are attributable to the copyright infringements alleged herein and
3 are not taken into account in computing the actual damages.

4 2. Pursuant to 35 U.S.C. § 284, award Plaintiffs damages adequate to
5 compensate for defendant Disney MPG's patent infringements, in an amount to be proved at trial but
6 in no event less than a reasonable royalty.

7 3. Pursuant to 15 U.S.C. § 1117, award Plaintiffs (a) defendants' profits; (b)
8 damages sustained by Plaintiffs in an amount to be proved at trial; and (c) the costs of this action.

9 D. Willful Infringement.

10 1. Pursuant to 35 U.S.C. § 284, enter a finding that defendant Disney MPG's
11 patent infringements as alleged herein were willful, egregious misconduct, and order a discretionary
12 increase of Plaintiffs' damages award up to three times the amount found or assessed, costs, and
13 attorney's fees.

14 2. Pursuant to 15 U.S.C. § 1117, enter a finding that defendants' trademark
15 infringements as alleged herein were willful, in reckless disregard, or in willful blindness to
16 Plaintiffs' copyright and trademark rights, and order enhanced damages, costs, and attorney's fees.

17 E. Award Plaintiffs their costs and attorney's fees as follows:

18 1. Pursuant to 17 U.S.C. § 505, award full costs and a reasonable attorney's fee
19 to Plaintiffs.

20 2. Pursuant to 35 U.S.C. § 285, enter a finding that Disney MPG's patent
21 infringements as alleged herein, present an exceptional case, and award Plaintiffs their costs and
22 attorney's fees with respect to their patent infringement claims.

23 3. Pursuant to 15 U.S.C. § 1117, enter a finding that Defendants' trademark
24 infringements as alleged herein present an exceptional case, and award Plaintiffs their costs and
25 attorney's fees with respect to their patent infringement claims.

26 F. Grant such other and further relief as the Court deems just and equitable.
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DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38(b), plaintiff demands trial by jury of all issues so triable under the law.

DATED: March 6, 2018

HAGENS BERMAN SOBOL SHAPIRO LLP

By /s/ Steve Berman

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